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SPURIOUS PREGNANCY.

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THIS interesting condition is well known to the human obstetrician. It is not known so well to us veterinarians; perhaps it would not be incorrect to say that we have absolutely no acquaintance with it.

My attention has been drawn to it by a case reported in a recent medical journal; and it may be of interest to the profession to have a brief *resumé* of the subject before them. It is also to be hoped that any gentleman seeing such a case may place it upon record.

In regard to spurious pregnancy in woman, Dr. Playfair, in his excellent treatise,* says:—

"In this most of the usual phenomena of pregnancy are so strangely simulated that accurate diagnosis is far from easy. There are hardly any of the more apparent symptoms of pregnancy which may not be present in marked cases of this kind. The abdomen may become prominent, the areola altered, menstruation arrested, and apparent fœtal motions felt; and unless suspicion is aroused, and a careful physical examination made, both the patient and practitioner may easily be deceived.

"There is no period of the child-bearing life in which spurious pregnancy may not be met with; but it is most likely to occur in elderly women, about the climacteric period, when it is generally

* Playfair's "Midwifery," pp. 150, 151. Am. ed., 1878.

associated with ovarian irritation connected with the change of life; or in younger women, who are either very desirous of finding themselves pregnant, or who, being unmarried, have subjected themselves to the chance of being so. In all cases the mental faculties have much to do with its production, and there is generally either very marked hysteria, or even a condition closely allied to insanity. . . . .

"*Its Signs and Symptoms.*—The physical phenomena are often very well marked. The apparent enlargement is sometimes very great, and it seems to be produced by a projection forward of the abdominal contents, due to depression of the diaphragm, together with rigidity of the abdominal muscles, and may even closely simulate the uterine tumour on palpation. . . . . The fœtal movements are curiously and exactly simulated, either by involuntary contractions of the abdominal walls, or by the movement of flatus in the intestines. The patient also generally fancies that she suffers from the usual sympathetic disorders of pregnancy. . . . .

"Not only may the supposed pregnancy continue; but, at what would be the natural term of delivery, all the phenomena of labour may supervene. Many authentic cases are on record in which regular pains came on, and continued to increase in force and frequency until the actual condition was diagnosed."

The methods by which this condition may be diagnosed are various, but the one most to be relied on is the simple expedient of causing the patient to inhale chloroform. Under the chloroform the abdominal tumour disappears, and her friends are thus convinced as to her true condition.

This, of course, does not produce a permanent cure, for the tumour reappears as the effect of the anæsthetic is lost; but the assurances of those who were present during the administration of the drug are sufficient to convince the patient that she is not *enciente;* and once convinced of this, the cure, as a rule, is effectual.

It seems strange that what information we possess on this subject in reference to the domesticated animals comes, not through the writings of veterinarians, so far as I have been able to discover, but through medical works.

Fleming, our best authority on obstetrics, under the head of Spurious Pregnancy,* describes three conditions, viz., *Moles* or *Ascidian monsters*, *Uterine kysts*, and *Hydrops uteri*, remarking that he is not aware that this "curious and obscure form of pseudo-pregnancy has ever been observed in animals."

If the accomplished author of "Veterinary Obstetrics" is not aware of this form of pseudo-pregnancy occurring in animals, it may be accepted as proof that no such case has been placed on record by a veterinarian. If, then, such instances do actually occur (rare though they be) among our patients, it is certainly startling to think that cases so valuable for the elucidation of psycho-physiological questions should have been overlooked by the profession. And that they do occur is scarcely open to doubt. Such acute and careful observers as the great Harvey have asserted without reservation that such a condition has been observed in bitches. Playfair states that similar phenomena are occasionally met with in the cow; and the following interesting case, reported in the *British Medical Journal*, must tend largely to remove any doubts from our minds, and convince us that the condition spoken of does occasionally exist among our patients.

"The Rev. Dr. Haughton made a communication on a case of phantom tumour simulating pregnancy in one of the lower animals, and he hoped that a careful study of the phenomena in this case might help towards the more philosophical study of what occurred in the human female, as the mental disturbance, so large a factor in our notion of the phenomenon as it occurs amongst women, would be almost or altogether eliminated. Having purchased a fine specimen of a rare variety of zebra, he was anxious to provide a suitable partner for him; he therefore obtained a healthy three-year-old virgin ass. It was necessary to have a virgin, as it was known that the first intercourse gave a stamp to the subsequent progeny. Frequent and apparently satisfactory intercourse took place between the two. The ass came into season at intervals of five weeks, and remained so from ten to fourteen days, and its period of utero-gestation was eleven months. It was therefore easy to discern when the animal was in foal. After six weeks, the ass began to enlarge visibly, and a

* "Veterinary Obstetrics," p. 165 (note).

man much accustomed to the breeding of horses declared that he could "feel the foal inside her." The eleven months expired, and the ass came into season again without having given birth to a foal. After a lapse of four months, she was again given the zebra, and again she swelled, continued so for eleven months, and again gave birth to nothing. In this case, he considered that the mental element might be disregarded, for the ass could have no object in deceiving the zebra. It was at first thought possible that she had aborted in the night and eaten the fœtus; but the most careful search showed not a trace of such an occurrence. On each disappearance of the swelling, her abdomen returned to its normal size in one day. Dr. McClintock thought that it was not by any means impossible that something analogous to a psychological element might have operated in the case mentioned. Brutes had far more feeling and intelligence than they were usually given credit for, and a very strong feeling accompanied sexual intercourse in them. Drs. Denham, H. Kennedy, MacSwiney, and the President also took part in the discussion. In the reply to Dr. McClintock, Dr. Haughton stated that he had no doubt that what the ancients called στοργή, the maternal instinct, was present, and that the ass's illusion of being in foal influenced her physiological condition; for her mammary glands were enlarged, and when the supposed pregnancy was over, they subsided with the abdominal enlargement."

GUNSHOT WOUNDS.

BY J. NUNN, M.R.C.V.S., ROYAL ARTILLERY, PUNJAB.

I SEND the following account of four cases of gunshot wounds which have come under my notice on the Khyber line of communication, during the late campaign in Afghanistan.

CASE NO. I.

On July 17th I was requested by the officer commanding at the post of "Pezwan" to look at two horses of the 4th Bengal Cavalry, that had been wounded in a skirmish with the "Kughianies" tribe on the 5th of the same month. The first was a chestnut country-bred mare, which, I was informed, "it

was a wonder she was alive, as she had been shot in the quarter, and the bullet had passed straight through her." Of this I was somewhat doubtful; but at first sight the wound certainly seemed to justify this conclusion, the bullet having struck her on the left quarter, midway between the root of the tail and the antero-inferior spinous process of the ilium, about six inches below the sacrum, and an orifice exactly corresponding was on the opposite side. A very slight examination, however, proved that instead of taking a straight course, the ball had been diverted upwards, travelled underneath the skin, over the sacrum at about the third superior spinous process, and made its exit on the opposite side. When the mare was turned round, with the light behind her, the passage could be clearly seen by the displacement of hair along its track. I ordered the orifices to be kept open with a pledget of tow, and to be syringed out with a weak solution of carbolic acid and water. On seeing her again, on August 1st, the wound had healed up, and the mare was fit for her duty. The injury, undoubtedly, must have been inflicted by a small round bullet, it being the custom with the Afghans to load their "Yeziels," or long flint-lock guns, with this kind of projectile. The sowar who was riding the mare was shot at the same time.

CASE NO. II.

At the same time I was shown a grey country-bred gelding, belonging to the same regiment, which was wounded on the same date. The bullet had struck him on the near hind leg, about six inches above the bend of the hock, and inclined to the inner side. The limb was very much swollen, and the animal could not put it to the ground. He had been placed in a set of slings that were constructed by the Madras Sappers. I examined the wound by means of a long probe made out of a piece of telegraph wire, and found that it passed in an *upward* direction for about ten inches, but *downward* there was no passage. I was told that after the horse was wounded he had been led back into camp, a distance of about thirteen miles over a very rough country, and that although he walked slowly he did not seem lame. He was tied up by the head, and allowed to get up and down as he liked, the limb being fomented. About four days

afterwards a quantity of straw close by caught fire in the night. The horse was very frightened, and made violent efforts to escape; since then he had not been able to place his foot on the ground. I suspected a fracture, which had been displaced on the occasion of the fire; but the swelling and pain was so great as to render any manipulation impossible. As I would be again visiting "Pezwan" in about a fortnight, I deemed it best to leave the horse till then, merely fitting a breeching to the slings, and ordering cold water to be freely applied to the part. On seeing my patient again, on August 1st, the swelling had increased to an enormous size; and on leading him out he was utterly unable to place the foot on the ground. As orders had been received that the country was to be evacuated; so a committee was assembled and the animal shot. I made a *post-mortem* examination at once, cutting down to a probe that was passed into the wound. This I followed up for about ten inches, stripping the muscles from the bone. The sharp ridge on the tibia at the wound had a slight notch in it. The fibula was fractured, as well as the patella, which had a fissure, partly united, passing obliquely from within, outwards and forwards. The surface of the tibia in patches was covered with a porcellaneous deposit, giving it somewhat the appearance of having been dipped in melted wax. There were a few small splinters of lead, but no trace of the bullet. On removing the tissues lower down I discovered a fracture extending from the inside, outwards and downwards, completely separating the end from the shaft of the bone. The bullet, "a Snider," was lodged just in front of the upper row of small bones of the hock, flattened out to the size of a half-crown. The shot was fired from above, and on striking the edge of the ridge of the tibia, a portion of the bullet must have been detached and broken up into splinters, causing the injury described to the head of the bone; the remainder passing downwards, becoming flattened against the small bones of the hock, and fracturing the end of the tibia, which was displaced by the horse struggling at the fire. It is somewhat remarkable that the passage downwards made by the larger portion of the bullet, should have been healed up, and that caused by the small splintered part have remained so long open.

CASE NO. III.

On July 31st a patrol, of the 17th Bengal Cavalry, was fired at close to "Yugdulluck" Fort, and a horse was wounded. I saw the animal, a bay country-bred, almost immediately afterwards. He had been hit on the near shoulder, about an inch in front of the ridge on the scapula and three inches below the superior part of the cartilage of prolongation. The wound was very small, and I was obliged to enlarge it to make an examination. This I did by means of my finger, and found that the bullet had made a round hole through the scapula about the size of a sixpence, without any fracture. It was out of the question trying to follow it up, so I kept the horse standing, and trusted to the bullet becoming encysted. I was obliged to leave the next day, but have since heard from the adjutant that the horse appeared to do well, until the evacuation of the country, when the regiment formed part of the rear-guard, and it was not thought advisable to bring more encumbrances than could be helped; so that the horse was destroyed.

CASE NO. IV.

A bay "Waler" gelding, belonging to F Battery, A Brigade, R.H.A., at present under my charge, was wounded at the action of the "Chardeh" Valley, near Cabul, on the 11th December, 1879, when two of the guns were captured by the enemy. The bullet entered the right gluteal region, about six inches behind the antero-inferior spinous process of the ilium, and four from the sacrum. It passed up the whole length of the back, and lodged just posterior to the upper angle of the scapula. On looking over the record of the case, the animal appears to have done his work up to the middle of June, when a large abscess formed in the lumbar region, close to the ends of the transverse processes of the vertebræ. This was opened, a large quantity of pus escaped, and the wound healed up. I first saw the animal on the 1st September, and on manipulation a hard substance could be felt at the wither. I determined to operate and remove the bullet, as it would undoubtedly have given rise to a serious injury if the horse were ridden; but I was obliged to defer it on account of the rain and unhealthy state of the

weather. On September 17th, as another abscess had formed in the same place as the first, I had the horse thrown, and opened the abscess, giving exit to a quantity of pus. On examination with a long probe, I discovered a passage up to the suspected situation of the bullet, and could feel some hard substance. I then made a free incision down to the spot, and by aid of a pair of forceps, extracted a Snider bullet perfectly intact. The wound was dressed with lint and a weak solution of carbolic acid, and up to the date of despatching this paper is doing well.

BURSATTI.

BY R. W. BURKE, STUDENT, DICK VETERINARY COLLEGE, EDINBURGH.

(*Continued from p.* 260.)

I. RESULTS.—When once the disease has been established in the system, it is liable, not only to generate its evils in other parts, but is also capable of being transmitted from sire to son, as shown by the investigations of Colonel McDougal and others. Some have denied this fact by presenting several young stock, the offspring of "Bursattied" stallions, to whom the disease had not been transmitted by the latter; but this proves nothing when placed by the side of the host of those which have been so affected. And the disease, when of hereditary origin, is more difficult to control and may seldom or never be benefited, either through the medium of science or nature. Notwithstanding the non-hereditary origin of other cases, and in which the sores have been early and effectually removed, I remember many in which it has been checked for a period of three years and more. This is also abundantly exemplified by referring to the stud-hospital tickets of years past.

Indigestion, Tympany, and frequent attacks of Colic, recurrent Diarrhœa, and emaciation may be mentioned as the remote results of Bursatti. When the liver is so charged with kunkurs in the advanced stages of the disease as to favour diminution in its secreting area, digestion and assimilation are the first to suffer deterioration, as an indirect consequence of the corresponding

diminution in the supply of bile—a secretion indispensably necessary in the discharge alike of digestive and antiseptic functions in the alimentary canal.

Occasional enzoöties of Glanders and Farcy have caused terrific devastations among the stud and regimental horses belonging to the Government during a corresponding rifeness of Bursatti disease—the result of a pre-existent modification in the health of the *recipiens*, induced by general Bursatti dyscrasia.

The results *locally* manifest may be briefly concentrated in the following:—

(1) *Stricture of the urethra.*

(2) *Paraphymosis*, resulting from the swelled condition of the penis, aided by the swelling and constriction of the prepuce, and accompanying surrounding œdema.

(3) *Permanent hardening—Cirrhosis preputii—of the walls of the "sheath,"* as the result of long-standing œdema and consequent pressure upon, and obstruction to, the blood-vessels in the sheath. The longer the œdema is maintained, the harder will the tissues of the sheath become. This condition of the prepuce is a common sign in the older stallions of their having suffered from the disease at a prior date. In the purchase of valuable stallions, therefore, presenting such a condition, and in the question of having valuable mares "covered" by such, the previous history of the first should be ascertained *si parabilis.*

(4). In some few cases *amputation of the penis* may be imperative. But it should be from the first ascertained whether it is possible to remove the whole of the indurated portion; otherwise the object of the operation will be frustrated, and the portion left only stimulated to augmented action.

(5) *Destruction of the lachrymal sac*, with *obliteration of the ductus ad nasum*, and a constant flow of tears down the face; (*b*) *destruction of the palpebrum inferius.*

(6) *Permanent interference with easy prehension*, from destruction of the root of the levator muscles [*levator labii superioris nasalis longus labii superioris alequæ nasi*] because of the extension of the disease downwards; (*b*) and from contraction of the *constrictor oris* and *retractor anguli* (*Zygomaticus*) muscles, resulting in the process of healing, in the case of the disease

being localised at the commissures of the mouth ; (*c*) and *lateral curvature of the lower lip*, from destruction and resulting contraction of the *Zygomaticus* during the spread and repair of the ulcer.

(7) In the case of the limbs, there often follows, in the worst forms of the disease, a *permanent lameness*, from adhesions in, and contractions of, the *flexor pedis tendons ;* (*b*) sometimes *anchylosis of the joints of the phalanx* also results, from extension of the disease to the still deeper structures, more especially when aggravated by bad surgical treatment.

(8) And, lastly, *canker in the feet*, because of the extension of the disease from the interphalangeal joints to the *crus pedis externum* ("horny frog"); subsequently to the *intra-ocreal* structures*, every tissue except true horn being involved : namely, the keraphyllous and podophyllous tissue, the substance of the "fatty frog," the ligaments and synovial membranes of the corono-pedal articulation, the insertions of the extensor pedis and flexor pedis perforans, and even the bone of the pedis, and the coronal and navicular bones.

II. NATURE OF THE SORES.—To render my description more explanatory, I will say that the veterinary surgeon will meet with the disease in one of three forms :—

(*a*) Nodular or Papillary,
(*b*) Ulcerative,
(*c*) Fungous.†

These are in the order of their stages ; but the second and third may alternate with each other, or be co-existent.

* I have coined this term for the sake of description.

† "Epithelioma in some few instances never loses its warty character. It begins as a warty growth, it does not ulcerate, but extends in this form over the neighbouring tissues and supersedes them entirely." (Cooke on Cancer). This is precisely so in Bursatti. Mr. J. Meyrick also writes, in the VETERINARY JOURNAL for November, 1878, that he has "seen pieces of kunkur picked from the membrane inside the eyelid of colts whose eye-fringes, being out of repair, did not keep off flies, an ulcer or sore not having had time to form."

Where the activity of the cancer-cells is at its maximum, the "*formative*" overcomes the "*ulcerative*" process, and the result is a fungous excrescence without ulceration.

Dr. C. H. Moore writes, on Cancer :—"In different cases and in different tissues the relations between the fungous growths and ulcerations vary, and also in different parts of the same sore ; thus giving the edges a peculiar serrated appearance."—*British Medical Journal.*

(*a*) *Papillary.*—This stage is characterised by the formation of a tumour in the skin, the characteristic of which is that it is hard, non-fluctuating, sessile, strictly speaking undefined from the immediately adjacent structures (in my experience it always moves *with* the skin), and is unaccompanied by all the cardinal symptoms of inflammation, being cold to the feel, and devoid of pain, which is sometimes evinced as the result of rough manipulation. A sense of itchiness, sometimes made manifest by the animal trying to rub the part violently against adjacent walls or it may be by occasionally biting the part, is the result, in my opinion, not of actual pain in, but of simple sensory stimulation around the seat of the tumour.

A section of the tumour occasions a creaking sound, and presents a leaden hue or bluish-white structure intersected by lines of white fibrous tissue.

The most noteworthy point in connection with this stage is that it, in the great majority of cases, escapes the notice of the surgeon, inasmuch as it rapidly gives place to the second stage —the ulcerative.

(*b*) *Ulcerative stage.*—This may be sub-divided into :—

(1) The characters of the ulcer ;

(2) Mode of its spread (*assimilation*).

Various terms have been employed to denote the true characters of this ulcer ; such as *Eroding*, *Sloughing*, *Phagedænic*, *Rodent* (?), *Strumous*, *Irritable*, *Callous*, etc. Such a list of terms, which in the end merely refer to special characters in particular cases, I think only leads to confusion. They all indicate some prominent symptom, and therefore so many subdivisions are not only tiresome and useless, but misleading.

In his lectures on Surgery, at the Minto House, Edinburgh, Mr. Chiene says :—"The words of John Hunter are,—'There are two varieties of mortification (ulceration), one with and the other without inflammation.' This saying," he (Chiene) advances, "goes to the root of the subject, and it states that there is an inflammatory and a non-inflammatory mortification, and you have to search out the causes and the symptoms." As the process of ulceration is identical with that of mortification, differing but in its degree, ulceration is also inflammatory and

non-inflammatory; and in the case of Bursatti ulceration, it is of the non-inflammatory kind. To exemplify which, I will now direct the reader's attention to the *theory of assimilation*, that is, to the mode in which the Bursatti ulceration spreads :—

We will call C the diseased cell in a Bursatti ulcer; and B and A, cells of the immediately adjacent healthy structures. Then the process is carried on by the diseased cell swallowing (assimilating) the surrounding healthy cells; and the result is that the speed of the disease gradually overtakes that of health, and finally occasions what is surgically recognised under the designation "ulceration." This, then, is the explanation of the term *assimilation* as applied to the spread of an ulcer.

But preliminary to the appearance of the ulcer as the result of the process of assimilation, are: degeneration, more especially fatty; death of the tissue swallowed; and the removal of this tissue. And this removal is effected in one of two ways, namely, by "*absorption*" or by "*casting-off*." We now, therefore, learn that the disease is spreading not only externally (*casting-off process*), but is also receiving circulation through the entire system (*absorbtive process*).

What are the naked-eye characters of the ulcer? On the whole, nothing specific. The destruction is going on; there is no substitution or repair to the tissues, as we would expect in "*healing ulcers*"; the "lymph" which is poured out by the subjacent blood-vessels occasions a series of granulations (*vascularised white-blood clots*) on the surface of the ulcer, but in obedience to the law of nature, there is formed from these a new growth identical in structure to that in which they lie (Paget); the vitality of the granulations being lowered by the disease action from around, degeneration and *sloughs** result on the surface of the ulcer. There is also putridity, and the discharge is fœtid, acrid, and "ichorous," excoriating and destroying the surfaces over which it passes, being sometimes thin and albuminous, sometimes thick, opaque, and containing much purulent matter and tissue *débris*. In the more advanced stages, the discharge is mixed with blood given from the ulcerated vessels; the surface of the ulcer is *irregularly cleft*,† being in places

* Hence the term "*Sloughing*" as applied to this ulcer.
† Hence the term "*Eroding*."

pale and non-vascular; in others vascular, bloody, and of a bright scarlet red; in others, again, it may be greyish or yellowish-green; in patches it is œdematous, and pits on digital manipulation; in others it is hard and *callous;** in others, again, it may be presenting attempts at weak cicatrisations ("vegetations").† The edges of the ulcer are ragged and irregular, in some places raised and everted, in others undermined and hollow beneath; the surrounding derma is usually *œdematous*‡ from cellular (cancerous) infiltration, and slightly pits on pressure. The spread of the ulceration is *usually* slow, *rarely* rapid: depending, however, on the seat of the ulcer, the *constitution*§ of the animal attacked, and upon other accompanying causes, as bad surgical treatment, etc. The *course* of the spread will be governed by two great laws: firstly, by the *way of least resistance*, and secondly, by the *force of gravity;* small kunkurs may be found studding the surface and under-edges of the ulcer at irregular points. These are the principal typical characteristics of Bursatti ulceration; but all of them are by no means constant, nor conjointly so well depicted.

(*c*) *Fungous stage.*—Nothing, perhaps, better explains the characteristic naked-eye structure of this stage than comparing it with an ordinary garden cauliflower. Here we see that the arrangement, the force of resistance, the amount of pigmentation, etc., are all widely different in the immediately neighbouring portions: the upper racemosed conglomerations being constituted of concentrically-arranged (transverse section) delicate laminæ, which are yielding and easily displaced by the fingers. The pigmentation is less pronounced, and the entire mass is readily friable in every direction; whilst a section through its supporting peduncle shows a structure altogether foreign to it, being dense, resistant, and more highly pigmented. This is just what is presented by a Bursatti fungoid growth. It is, however, not so

* Induration is a necessary concomitant in epithelioma, no less than in skirrhus.—(Cooke).

† "The islands of Reverdin."

‡ This is one character which has led some surgeons to designate the nature of the cancerous ulcer "*Rodent.*"

§ Thus it is that in the chronic cases marked by Cachexia, I have observed the speed of the ulceration approach almost that of true "*Phagedænic ulcers.*"

distinctly divisible into a peduncle and a succeeding flower-head; but its strata may be divided, for the sake of description, into the *peduncular* (lower) and the *floral* (upper).

The characters of the peduncular stratum, it must be already gathered, are more condensed and uniform than the floral, sometimes highly pigmented (yellowish-brown), approaching cartilaginous tissue in appearance, creaking on section; being studded with opaque nuclei (kunkurs), and intersected by white, sometimes glossy bands of fibrous tissue, which are seen to subdivide and diverge towards the peripheries of the section, completing an irregular reticulum with its neighbouring ramifications. In places, distinct smooth cavities may be seen occupying the surface of the section, and containing in their interior hard, *quasi*-stone kunkur. The latter have been removed of the size of large peas, and even larger; the largest I have seen being in the possession of Mr. George Oliphant, which was removed by him, on autopsy, from a remount "Waler" gelding, of the Hapur stud.

III. PREVENTION.—Prevention constitutes one of the essential factors in the treatment of disease. No one will fail to recognize that the thorough investigation of the influences conducive to the production and perpetuation of diseases has far higher claims to be regarded as a science, than attempting to devise plans of mere palliative or curative treatment of diseases which have already developed. And if we would observe this time-honoured maxim, that "prevention is better than cure," we must keep the horses excluded, as far as is possible, from flies. All doors, railings, the manger, etc., should be painted over with preparations which ward off the invasion of flies. All dressings used for simple wounds in the hospitals should be combined with a little sulphur, aloes, or camphor. General cleanliness demands the greatest attention. Sulphur fumigation (sulphurous acid gas) in the stalls ought to be continued throughout the season of flies in all stables in which valuable horses are located.

The confinement of animals at all hours of the day within their stalls should be avoided, where feasible, during the period at which flies are very numerous and troublesome; and if the great heat of the sun does not threaten otherwise equally dan-

gerous consequences, all animals should be let loose in the paddocks after their first meal in the morning, and be restabled not earlier than at sunset, as not until then are flies least abundant.

The cruel practice of cutting short the tails of animals, and the employment of "heel-ropes," should be strictly interdicted.

All animals should be supplied with "eye-fringes" during the summer and the season of the rains. Syces (grooms) having neglected to put the latter on their horses prior to letting them loose into the paddocks, and more especially on such as are confined to their stalls, should be fined four annas for the first, eight for the second, and be discharged for the third offence.

And, lastly, every stallion having shown the disease for two consecutive seasons should be castrated.

IV. TREATMENT.—There has existed from time immemorial a diversity of opinion as to the curability alike of Bursatti disease and Cancer in the *human* being, and all who have any, the slightest acquaintance with the malady will understand and appreciate the reason of this. Those who maintain it to be incurable, point to the tendency it has of diffusing its "poison" over a wide area, its recurrence, the Cachexia which follows it, and its rapid multiplication; while those who are in favour of the opposite view, do not admit the theory of *primary infection*, and to corroborate this they cite numerous instances in which there has been no recurrence. The advocates of the former theory quite ignore the fact that the curability or incurability of Bursatti depends altogether on the circumstances attending it. When the disease has existed some time prior to its treatment, and has already entered the system, when an operation has been delayed, when an operation has been performed, but imperfectly, and when the disease is hereditary—these collateral circumstances will, I admit, lead to results as unsatisfactory as they state them to be; but under other and more favourable circumstances, there is not the least doubt, I think, as to the curability of it.

Even under the conditions above-mentioned, however, numerous have been the so-called remedies in the form of *specifics*

vaunted by empirics for the cure of it, but all curative constitutional remedies are *then* absolutely of no avail whatever, and are wholly unable to stand the test of trial.

As we have observed that the malady, which is at first confined to purely local limits, gradually invades the system, thus becoming constitutional, and as this is invariably the case, it should clearly be our first care to so eradicate it externally that its morbid influence may not have the time to exercise deleterious action on internal organs and remote structures. Cases, however, are daily brought to the surgeon in which the disease is a long-existent one, and under these circumstances it is his duty to afford what relief there be in his power. Though the cause of his sufferings may be apparently removed, yet the unfortunate subject of them is constantly exposed to harassing doubts of its recurrence, which slowly but surely eat his very life away. By supporting the system the rigour of the disease may always be palliated, and though there is no known drug for the *cure* of it, the patient may be so relieved and sustained as not at least to be hurried to an untimely end through the effects of a perennial torture. With this view, endeavours should be made to support the system generally, in order to enable it to battle with the disease. I shall not pretend to lay down favourite prescriptions here, but might mention the remedies which have received the greatest trial. The measures, then, chiefly adopted have been in the administration of catalytics, the iodide of arsenic, the sulphuret of potash, and the preparations of mercury being oftenest used and with the most favourable results. Hydrochloric acid has also been much employed in the practice of Mr. George Oliphant, F.R.C.V.S., of the Hapur Remount Depôt.

I consider no treatment as a *specific* in this disease, but am inclined to think that stimulation, combined with antisepticity, is demanded, more particularly in its later stages. Any of the preparations of phosphorus, alternated with hydrochloric acid, with an ample supply of nutritious diet of a stimulating kind, may be had regulated and continued resort to. Iron and potash salts should be freely given to strengthen the red corpuscles of the blood, and thus promote oxygenation, combustion, and *elimina-*

tion. Phosphorus and potash salts, being *nervine restoratives*, will especially aid in stimulating the process of elimination by rousing the nervous energy. Oats and carrots, containing the largest percentage of phosphorus and potash respectively, will, therefore, constitute excellent feeding. This, with the usually ready aid of nature in her efforts to get rid of all deleterious matters from the blood, ought, it may be hoped, in the course of time, to bring about such a harmonious working of the bodily functions as to again constitute health.

Artificial antagonism is not complete in the simple employment of stimulants alone, but demands for its repletion a combination or alternation of stimulants with direct antagonistic agents. Simple stimulation acts only as a secondary means in affording elimination (Beale), whilst antagonistic agents take the place of a passive or even primary medium in the fulfilment of the task achieved by the glandular cells. As the osseous framework in an animal body serves to act as a passive or primary agent of locomotion, by affording lodgment to muscles, so, in like manner, may these direct antagonistics be designated passive or primary agents of elimination by producing "death" of the Bursatti "poison" diffused in the system. Now, what is the nature of this antagonistic agent which will act upon, destroy, and effectually expel this poison from the system of the recipient, is a matter *sub judice*. Professor John Clay, of Birmingham, however, has very recently published the results of his experience of the treatment of Cancer in the *human* subject, and his remedy, Chian turpentine, is doubtless meriting our consideration and trial; as it is one which is declared to have achieved results the most highly satisfactory in the cure of a disease that has eluded every plan of treatment heretofore devised. I therefore direct the attention of the reader to the *Lancet* of March 27th, 1880, p. 477, so that the true efficacy of his treatment may be fully appreciated.

The editor of the *Lancet*, April 3, 1880, writes:—"Probably not a tithe of the medicine likely to be sold under the name of 'Chian turpentine' during the next few months will be genuine. . . . . Identification of the genuine drug will be attended with more than ordinary difficulty."

SYMMETRICAL SPLENT.

BY C. G. H. REILLY, M.R.C.V.S., 7TH DRAGOON GUARDS, ALDERSHOT.

TROOP mare B 47, six years old, well-bred, admitted 20th July, 1880, for severe lameness near fore limb, was found to be the subject of an exostosis on the external aspect of that limb, five inches below the carpus, involving the metacarpus, magnum and parvum, and interosseous substance. The periosteum was highly inflamed, there being extreme pain on pressure. The patient was placed on low diet; cold water dressing was applied until the 24th, when inflammatory symptoms having to a slight extent subsided, tincture of iodine 5j. was applied twice daily, up to the 28th, with slight beneficial effect. At this date, on the recommendation of Mr. G. R. Griffith, A.V.D., probationer, 7th Dragoon Guards—skilled, no doubt, in the most recent advances in surgery—the periosteum was punctured by the actual cautery. This treatment he adopted with the successful result of enabling the mare to be returned for duty on the 20th of August.

Now the matter I more particularly wish to bring to the notice of the readers of your valuable Journal, is that this mare has returned to the infirmary, lame on the off leg, and that the cause of her irregular progression is an exostosis exactly of the same character, and in the same position as on the opposite limb attacked on the previous occasion. This naturally gives rise to the question as to cause. Are such exostosis hereditary? Have they all been the result of accident, or do they depend on peculiar formation? I would suggest that from the position occupied by both growths, and their being symmetrical, that they were caused most likely by peculiar formation in this case, though experience has convinced me that, in a general way, the splent or exostosis is the result of accident, and is caused by concussion to the periosteum, not upwards through the column of bones, but extraneously, and that the disease so frequently attacking the internal aspect of the extremities has nothing whatever to do, in the generality of cases, with centre of gravity, but is due to injury inflicted by the iron shoe, probably not from one but from a succession of applications. That this may appear impossible

to some (and especially to those who pride themselves on possessing horses that could not possibly "interfere"), I have no doubt; yet any one who has taken the trouble to examine the inside of their horse's legs, even in ordinary work, will find small particles of soil, not splashed, but pressed on by the opposite foot, unmistakable signs of interference, and may lead them to surmise what takes place in the menage and hunting-field.

THE TRANSMISSIBILITY OF TUBERCULOSIS FROM THE BOVINE TO THE HUMAN SPECIES.

BY J. MACKINDER, F.R.C.V.S., PETERBOROUGH.

At the recent meeting of the British Medical Association at Cambridge, the subject of bovine Tuberculosis was discussed, and the danger the public was exposed to was pointed out (see VETERINARY JOURNAL for last month). In the course of conversation, Mr. MacKinder, who was present, mentioned that he knew of an instance in which the disease was probably conveyed to a family. The following are the particulars which he has since communicated to us.

IN answer to yours of the 12th instant, I willingly give such information as lies in my power in reference to the case I mentioned at the British Medical Association's meeting at Cambridge.

About two years ago I was requested to examine a cow supposed to be suffering from Pleuro-pneumonia. I found her to be affected with Tuberculosis.

The owner was unwilling to have her killed, she being in calf. I therefore gave her tonic medicines, and by good nursing she gained a little strength.

She brought forth a living calf, and was sold for five pounds to a cattle dealer residing beyond my district.

This person, a fine, healthy-looking man, weighing about 16 stone, kept her to milk for his own use, and to retail amongst his neighbours.

In about six months he was compelled to have her killed, as she became quite emaciated, although she gave a fair quantity of milk.

The dealer soon began to show signs of Phthisis, as also did

other members of his family. He died in February last, and since then others of his family have died of the same disease.

I am informed that there was a tendency to Phthisis in the family; still, the fact of the disease showing itself after partaking of the milk from this cow, proves, in my opinion, that the milk either produced the disorder, or developed the latent germs of the malady.

I am quite aware of the importance of this subject, and therefore shall make further inquiries as to whether (the milk, as I have said, having been retailed to others) Phthisis has since prevailed in that district to any extent.

HEPATIC ASCITES.

BY CHARLES WHITWORTH, F.R.C.V.S., LONDON.

FOR obvious reasons, the petted dog is of all animals the most subject to hepatic maladies, the symptoms of which are (in many cases) so very obscure as rarely to be taken cognizance of; yet in other and chronic forms, such as the malady selected (*ut supra*), one may manage to link cause and effect, and arrive at a satisfactory conclusion. Hepatic Ascites, is most apt to be associated with that particular state of the liver termed "cirrhose," which consists of chronic inflammation and hypertrophy of the connective tissue which pervades and covers the liver. In the living body, the presence of this hepatic malady is for the most part a matter of inference only. It is rendered probable by its ascertained frequency in connection with Ascites, and by the absence of any other obvious cause for the Dropsy.

This malady comes on gradually while at first it gives rise to no peculiar symptoms; but as the connective or areolar framework slowly becomes hypertrophied, the liver becomes abnormally firm, and subsequently contracted, hence results a diminution in the calibre of the branches of the portal vein, as well as of the hepatic artery and duct.

From this, atrophy of the lobular structure of the liver ensues, the hepatic cells undergoing fatty or granular degeneration, or

becoming completely destroyed in parts of the gland. The diminished flow of blood through the portal vein favours congestion of the capillaries of the gastric and intestinal mucous membrane, whence arise hæmorrhages, whilst it also produces engorgement of the capillaries of the peritoneum, and hence Ascites results.

The subject of my case is a fox-terrier dog (by name "Tinker"), the property of W. Sherwood, Esq., of Curzon Street, N., by whom I was consulted, when the animal showed the following symptoms, viz., pyrexia, marasmus, emesis, ascites, cough (symptomatic), flatulence, constipation, dry rough skin—which looked unhealthy—urine scanty, with depression of spirits. From this it appeared to be one of those cases of Ascites resulting from hepatic induration. However, for such I treated him, on general and accepted principles, say for six weeks, when his emunctories were fairly acting; yet emaciation and debility increasing, together with the abdominal distension and aggravation of every symptom (save in acuteness).

On the 1st day of August last, I made my usual call, when he presented the following symptoms (disease had so disfigured him that he was a most pitiable object): his skeleton was apparent, with sad expression of countenance, pupil dilated, conjunctival mucous membranes pale, distension augmented; œdema of all four limbs, and in submaxillary space, which extended to the sternum in a pendulous mass. The (symptomatic) cough increasing.

The distress therefrom arising became urgent and extreme, and at length, to afford temporary ease to the patient, and in the faint hope also of giving him permanent relief, I resorted to the mechanical expedient of paracentesis. Removed about three pints of serum from his abdomen, and gave orders as to nursing and subsequent treatment. The dog has so far survived the attack, and now takes food with avidity, which I fear is not assimilated, as he does not look proportionately well —*i.e.*, he remains short of muscle.

Editorial.

THE FUNCTIONS AND POWER OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

For many years the functions and power of the Royal College of Veterinary Surgeons have been either ignored, forgotten, misunderstood, or more or less denied or limited by those who found it to their interest to maintain it as a subordinate institution to some other establishment, which it was feared it might control or interfere with. The intention of those who applied for and obtained the original charter of incorporation in 1844, can now only be divined by the terms of that charter; but there can scarcely be a doubt that the scope and functions of the college were intended to be wide and ample, in order to raise the standard and promote the advancement of veterinary science, while protecting its graduates. The history of the Royal College shows that its powers were soon denied, or were allowed to remain in abeyance; while its functions were mainly, if not altogether, limited to the examination of students who desired its diploma. It has never in any way attempted to afford protection to the title it confers upon its graduates, and it has not been allowed to do much in promoting veterinary science. Until quite recently its right to interfere with the technical education of students was strenuously repudiated by those who were opposed to improvements of any kind; and though it was legally and morally responsible for the proficiency of its graduates, it yet was permitted to have very little to say or do as to the degree of skill or training they should possess.

Every time it timidly ventured to move in this direction, its advances were repelled, and it had to satisfy itself with the position of a mere licensing body, compelled to give its diploma after a superficial examination on subjects dictated by the schools.

The painfully imperfect education of veterinary students at last compelled the body corporate to interfere with the curriculum of study, as well as the subjects studied; and in 1875 steps were taken to extend these. But, as usual, urgent opposition was offered by the teaching establishments, and the question of legal power again arose. This time, however, the profession had emancipated itself from the injurious school domination which had so successfully held it in bondage for more than thirty years, and the opinion of an eminent counsel was sought. That opinion was entirely in favour of the Royal College, and adverse to school obstruction; and the duration and nature of studies were so amended as to prove of great benefit to the profession and the public. But this was only one small step forward. Grave imperfections still existed, and do now exist, in professional education; and these imperfections had and have a very damaging influence. Further steps of a most important character have been taken, and others must follow; but again the question of right to interfere has arisen, and improvement is once more sought to be checked by those who not unfrequently prate of the advancement of veterinary medicine, etc. The opinion of the eminent lawyer afore-mentioned, as to the rights and duties of the Royal College,

though entered in its minutes, appear to have been already forgotten, strange to say; but it is necessary that it should be remembered by every one who has the welfare of his profession really at heart, in order that most essential reforms may be carried out without let or hindrance. We therefore briefly refer to this opinion in order to justify the College in what it has recently accomplished, and what it may undertake in the future.

The learned counsel, after a careful study of the charter, concluded that the body corporate was entitled to regulate, by means of bye-laws, the duration of previous studies. He writes: The charter (at p. 15) authorises bye-laws for determining "times, places, and manner of examining;" also "for regulating the extent of such examinations;" "for appointment of persons to examine, etc.";—which expressions seem to cover everything connected with examinations, and, in addition, authorises bye-laws, etc., "for admission or rejection of such students;" which latter words seem to cover all other matters which may be deemed necessary conditions of admission, in addition to the passing of a proper examination—such as AGE, PREVIOUS EDUCATION AND TRAINING, CHARACTER, ETC. The subsequent words entitling all qualified students (not persons) who shall have passed the examination, to claim admission, show that the requisites are: 1. Studentship; 2. Passing the examinations; and 3. *Some other qualification.* No qualification is imposed on students by the charter; *consequently the qualification may depend on the bye-laws.* The doubt suggested has probably arisen on the words in the first clause of the charter, which apparently only require studentship and passing the examination; but these words would be considered as controlled or explained by those at pages 15, 16.

This every one would consider the real meaning of the charter, and it will be seen that it gives the Royal College full right to regulate the previous education and training of the students who may seek to become graduates. Did it not confer this right, it would not be worth the parchment on which it is engrossed, so far as the profession and the public are concerned, and a new charter containing such power must have been procured. It is explicitly stated in that document, that it is granted on the understanding that it would "materially contribute to the advancement of the veterinary art and the respectability of the veterinary practitioners." How could it do so if it were not invested with power to regulate the education and professional training of the student? It is all important that the profession should be fully cognisant of its powers and privileges, as well as its duty to itself and the public. It is only by this knowledge, and founding its action upon it, that the progress which has been so auspiciously begun can be continued. The profession has its welfare in its own hands, and while the functions entrusted to it, as a body, are most important and honourable, the full and judicious exercise of these functions is an imperative duty to veterinary science, the public interests, and humanity.

HUMAN AND ANIMAL VARIOLÆ: A STUDY IN COMPARATIVE PATHOLOGY.

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(*Continued from p.* 335.)

GOAT-POX.

THE goat has a Variola of its own, which possesses as special and distinctive characters as that of the animals I have already described, and is entirely independent of infection from other species. In some countries this *Variola caprina* is apparently unknown, in others it is extremely rare, while in at least one country, Norway, it is a frequent, if not a continuous disorder amongst the caprine population. I am not aware if it has ever been witnessed in this country, where goats are so few in number. For Germany, Hering says the disease is rare.* Hertwig† describes an outbreak, and gives illustrations of the eruption. The animals were at first unwell, and there was diminution of the lacteal secretion, with great sensitiveness of the udder—the goats had been in milk about three weeks. The first pock was seen on the udder, and on the fifth day was the size of a pea, standing about two lines above the skin, flat, apex rounded, moderately red, with a small areola, which increased in size. Two or three days afterwards the pocks were reduced to the size of a hemp-seed, pale-red and firmly adherent to the skin. On the tenth day they were quite dry and covered by a thick brown crust, which on the eighteenth day fell off, leaving a cicatrix. The disease had much more resemblance to Cow-pox than to Sheep-pox. Spinola, in 1847, witnessed a similar outbreak, the eruption being most visible on the udder. In September, 1832, the disease appeared among a drove of goats (54), in Geislingen, attacking first seven, then three of the number. In some of them there was fever at the commencement, then the eruption of pustules; though generally there was little constitutional disturbance, and only diminution of milk, with soreness of the mammæ before the pocks appeared. Sheep in contact with these goats were not affected.‡ But Bollinger says it is so infrequent, that in the course of twenty or thirty years scarcely half a dozen cases are recorded. He is of opinion that goats receive the disease either from cattle affected with Vaccinia, or sheep suffering from Sheep-pox. But he admits that though now and again the same form of Variola is witnessed in cows and goats, yet that the latter, as a rule, remained exempt from the disease when confined in the same stable with infected cows, and that the inoculation of goats generally yielded negative results. In order to prove that goats may be infected with Sheep-pox, he gives the following on the authority of Prietzsch: "In a stable in which sheep suffering from Sheep-pox were confined, three goats were simultaneously attacked with the disease, the eruption being the same as in the sheep. Upon the udder were numerous pisiform variolæ in the form of hard, flattened papules, with a trifling amount of lymph; papules were also distributed over the body, being more numerous upon the hind extremities than the abdomen. Marked symptoms of fever were also present, with inappetence, swollen lips, and a somewhat profuse muco-purulent discharge from the nostrils. In fourteen days convalescence was established. Two other goats were inoculated on the ear with the virus of Sheep-pox; a single pustule formed at the seat of inoculation, and the animals did not afterwards take Sheep-pox."

That there is no relationship, so far as origin is concerned, between Sheep-pox and Goat-pox, nor yet, for that matter, human Variola, is evident if we

* Specielle Pathologie und Therapie für Thierartze, p. 389.
† Magazin für Thierartze, Band vi.
‡ Op. cit., 1856.

look at a country where the latter is all but unknown, and the former is not seen. From 1864 to 1876 inclusive, Sheep-pox has been reported only twice in Norway; in 1865 there were two cases, and in 1868 fifteen cases, all due to foreign importation. According to Hansen, the official veterinary surgeon in central Norway,* in 1867-68-69, and 1874 and 1875, extensive outbreaks of Goat-pox were observed; and according also to the official veterinary statistics in 1865, eleven cases of the so-called "Water-pock" (*Variolæ serosæ*), and in 1868 four cases of common Goat-pox were recorded in South Norway. Many cases which escape the notice of the Government veterinary surgeons are supposed to occur. In 1871 Dr. Cæsar Boeck, of Christiana, was on a botanical excursion in South Norway, and in July, in Thelemarken, he saw a drove of cows and goats being driven from the woods into their huts. The cattle were quite healthy, but about forty of the goats were affected with a variolous eruption on the udder and teats, as well as about the mouth. In some there were merely deep dark-coloured sores remaining, in others—the majority—there were seen thick brownish crusts, about the size of a pea, on the mouth, udder, and adjoining parts; while in a few the disease was so recent that, with the crusts, there were also observed pustules from the size of a lentil to that of a pea. From inquiry and examination, Boeck was of opinion that the exanthem had been more or less general over the body, and that there had been fever and resulting emaciation. The milk secretion had been almost diminished, and the fluid itself was drawn with difficulty and pain. None of the goats had died, and no other animals had, so far as the shepherdess knew, been in contact with her drove. The cows were fifty in number, and none of them showed the least trace of disease. The cows and goats were milked indiscriminately by three women, whose hands were not washed from the commencement to the end of the operation; so that there was abundant opportunity for transmission of the disease from the goats to the cows, had the latter been susceptible; while the constant association of the two species, particularly in the closely-packed sheds, gave every facility for infection through the medium of the atmosphere, if this could have taken place. Experimental inoculation would have been tried, but no good lymph could then be found. The epizoöty appeared in the spring, among the four-year-old goats which had been kept during the winter by themselves in small sheds. When they joined the other goats at a later period, the outbreak became general in a short time. Flocks of sheep associated with the goats without any disease resulting in them. Sheep-pox—a very fatal disease—had never been seen in that part of Norway. Boeck, who contributes his observations to the *Deutsche Zeitschrift für Thiermedicin* for December, 1879, alludes to veterinary surgeon Hansen's observations with regard to the outbreaks in 1867-68-69, and 1874-75, in Gudbrandsdalen. In the first year the malady appeared in August in two different flocks, numbering 170 goats, attacking without exception the males, kids, and those in milk. In the males the eruption was sparse, and limited to some pock pustules on the scrotum. (In the following year, the exanthem on the males extended to the inner surface of the thighs.†) Hansen was called in when thirteen of the 170 goats had died, and nearly all the others were affected. On examination of two of the carcases, he found the eruption all over the body, and pustules and ulcerations on the mucous membrane of the stomach and intestines, as is often witnessed in malignant Sheep-pox. The origin of the outbreak could not be

* Gudbrandsdalen d. h. Gudbrandsthal.

† From this it will be seen that the male goats are as liable to the Goat-pox as the females. It is the same with the rams associating with flocks of sheep, and which suffer as much as the ewes; and it would be the same with bulls or bullocks, did they consort with cows affected with Cow-pox. Sex makes no difference.

accounted for, the goats not having been in contact with strange animals, and there was no similar disorder prevailing among other creatures. "I have practised in Gudbrandsdalen," says Hansen, "for twenty years, and I have never seen either Cow or Sheep-pox." In the goatsheds were sixty cows and eighty sheep, but these remained healthy.

In June, 1868, in another district of the same parish, Hansen was sent for to see a herd of goats, and of 114 eighty-four had an eruption of pocks on the udder and teats; twenty were severely affected, and, in addition to the pocks on the lacteal apparatus, there were many on the inner side of the thighs and on various parts of the abdomen, some of them having ruptured and left large sores. The pain was so acute during milking that the animals cried and struggled, and had to be held. The milk was rather viscid and mixed with blood. The disease existed in all stages among the animals, from red spots to shedding crusts and the formation of cicatrices. The outbreak had only occurred eight days previously. Thirty animals were yet unaffected, and these were isolated. The neighbouring goat-farms were free from the malady, and Hansen could not account for its presence on this farm; but as it was only distant about half a mile (Norwegian) from the place where it prevailed the previous year, it might have been conveyed from there. In July all the goats on the farm had been infected; at the commencement of August Goat-pox had nearly disappeared, and during the entire period of the outbreak the cattle there and in the neighbourhood had continu ed healthy.

On August 17th of the same year, Hansen was again called to attend upon goats at another place, not far from the last, where there were seventy-four goats, only thirteen of which were free from Goat-pox. Twelve were severely affected, and three were so ill that they could not follow the others. The pocks on the udder, teats, and thighs could be studied from the first or inflammatory stage to the crust-forming and cicatrising period, the cicatrices being distinguishable from ordinary scars by their light hue. The diminished secretion of milk and the emaciation were very marked, though the malady was not so fatal as in the previous year. On four neighbouring farms the disease also appeared among the goats.

When the disease once appeared in a flock it spread rapidly, and spared neither young or old, male or female; those goats giving most milk having, however, the mildest attack, and the males having the pock-pustules most developed on the inside of the thighs. The contagium might have been conveyed to these farms by direct contact with the first infected farm, or, as was more probable, through the medium of servants and children. In the following month a number of other farms were visited by the Goat-pox. Some of the goats had phlegmonous inflammation of the udder as a consequence of the disease, and had to be killed.

In 1869 two herds of goats were attacked, but timely and careful treatment having been adopted the results were not so serious. The milch goats were the worst attacked, and the mortality was greatest in the largest herds. The total number of cases for this year was 129. In the four succeeding years Hansen did not know of any outbreaks.

In July, 1874, Goat-pox broke out in two different districts, one and a half Norway miles apart, three farms being visited by it—one with 150 goats, another with 120, and the third with 60. All of these were more or less affected. The disease first commenced with slight fever; then followed efflorescence, subsequently the eruption on the udder and teats of small vesicles the size of a pea, and which soon became converted into pustules. Not unfrequently suppurating furunculi formed, and the whole udder was involved.

In some instances pocks appeared on the lips. Towards the end of August, there were reported 580 cases of Goat-pox in the two localities. On the neighbouring goat-farms the disease was not seen. There was no

evidence that it could be communicated to mankind, though it appeared not improbable that mankind could convey it from one flock of goats to another. Ten deaths only were reported. In 1875 there were 200 cases. Hansen states that altogether there were 1,300 goats attacked, with from twenty-five to thirty deaths—about two per cent. The incubative period appeared to be short, certainly not longer than a week, while the duration of the disease was from two to three weeks in the severer cases. The pock cicatrices were more or less stellate-shaped. Immunity was very rare indeed, nearly every goat exposed to infection taking the disease. The outbreaks always occurred during the summer months, and the epizoöty did not extend beyond Hansen's official district. Boeck and others competent to judge had no doubt whatever that the disease was Variola. Neither sheep nor cattle, notwithstanding their constant exposure to infection and being crowded with the goats in close sheds, became affected. Human Variola was not present in the district during the years when Goat-pox prevailed.

I have entered into these details with regard to Goat-pox, because they support in the strongest manner the position I have taken up with respect to Variola in man and animals, and prove that, inasmuch as we have shown that there is a Cow-pox, a Horse-pox, and a Sheep-pox, there is also a Goat-pox, independent of the Variolæ of other animals.

Swine-Pox.

Swine-pox is not a very rare disorder, and though I fail to find more than one outbreak recorded as occurring—though outbreaks may be frequent—in this country, yet I have been assured by a very observant and competent veterinary surgeon that he saw a large number of swine suffering from the disorder in Kent. No Small-pox or Cow-pox was present in the locality. Like the ovine Variola, the *Variola suilla* is a general eruptive disease, the symptoms being pretty constant in their development, and resembling those of Sheep-pox. After the febrile phenomena, which are often very intense and continue for some days, there appear on the back, abdomen, chest, neck, head, and inner surface of the thighs, petechiæ, which soon become papules. Towards the sixth day there are vesicles, and about the ninth or tenth day, pustules; the contents begin to desiccate and form crusts, which are eliminated in a few days, leaving a well-defined cicatrix. The eruption appears discrete and confluent, the disease being benignant or malignant, regular or irregular, according to the form it assumes. Young pigs are most susceptible, and the mortality often reaches twenty or twenty-five per cent. Hering has seen the disease in older swine. The malady is very contagious, and its course and complications, as well as infectiousness, are very closely analogous to those of Sheep-pox. One attack protects from another. Felix (*Recueil de Méd. Vétérinaire*, 1827) describes an outbreak which prevailed among swine in the Dordogne department, during four years; and Rueling,* Greve, Spinola,† Viborg,‡ Pozzi, Gasparin, Eisele,§ Hering, and other competent veterinary authorities have studied Swine-pox at various times. Gerlach has experimentally proved that the disease can be transmitted to sheep, and the Sheep-pox to pigs. Cases of accidental transmission from sheep have been recorded. Bollinger mentions that some young swine were attacked after being lodged in a pen where diseased sheep had been located some months previously, and these pigs communicated their malady to others which had not been in the shed in question. But that there is no genetic relationship

* Physikalisch Medicinisch, Oconomische Beschreibung der Stadt Nordheim, 1779.
† Schweinkrankheiten, 1842.
‡ Behandlung des Schweines als Hausthier, 1804.
§ Krankheiten der Schweine.

between Swine and Sheep-pox is again proved by reference to Denmark, where the latter does not exist, and where, nevertheless, Swine-pox is sometimes prevalent, as in 1878, when it appeared in several localities in Jutland, according to the veterinary sanitary reports of that kingdom. The same evidence could be given with respect to other countries. Viborg, Spinola, and Hering have proved that the disease is readily inoculable to other pigs. Rueling, Viborg, and Hering have not been successful in transmitting Swine-pox to the horse or cow; though Gerlach succeeded in inoculating a goat. The transmission of Swine-pox to mankind has been sometimes noted. Arnsberg,* for instance, knew of three persons who had been infected; and Roell gives similar evidence. Accidental transmission of human Small-pox to pigs has been recorded now and again, and that this transmission may take place, I do not deny; but it certainly does not prove that Swine-pox is dependent for its origin on Small-pox. The former occurs where the latter is not present, as in Denmark, and Small-pox may rage for years in districts where pigs are numerous, and the latter show no signs of Variola. In the Würtemberg reports for 1877, mention is made of the prevalence of the "wild" or *Wasserpocken* (*Variolæ serosæ*) among suckling swine. These pocks soon burst, and their contents mixing with the milk, were ingested by the young pigs in the act of sucking. These had in a short time a yellowish-brown eruption, first about the eyes and nose, and then over the entire body. When the eruption was noticed early, and the young pigs were then removed from the sows, the consequences were not so serious; but when the exanthem extended over the entire body, they quickly died. Bathing them in bran water or camomile tea was supposed to have cured a good number. No mention is made of Small-pox among people. In 1878, according to the VETERINARY JOURNAL (vol. vii., p. 210), there was a serious outbreak of Swine-pox in many localities in the Hernals and Baden districts. It first appeared among swine of Hungarian origin imported from Odenburg, and from them was communicated to the native herds. The mortality was unusually great. The conditions attending the appearance, course, and termination of the disease were precisely analogous to those which obtain in Sheep-pox, and the veterinary sanitary measures in force for the latter were adopted successfully for the Swine-pox. No mention is made of Sheep-pox, Cow-pox, or Small-pox prevailing at the time.

DOG-POX.

In the dog, Variola has been observed and described by many authorities, and is, in fact, a comparatively well-known disease to veterinarians. It chiefly attacks young dogs, though old ones are not exempted, and one attack affords immunity from others. *Variola canina* commences, as in other animals, with fever, which continues for two or three days, and is then followed by the appearance over a large surface of the body, though rarely on the back or sides, of red points resembling flea-bites, which in a very short time are the seat of papules, and then of vesicles. The contents of these become purulent, and finally dry into a crust, which, being shed, leaves a marked cicatrix. In the dog, as in the sheep, goat, and pig, the disease does not always maintain the same form; it is sometimes epizoötic, and is benignant or malignant. Young dogs nearly always succumb, and a necropsy often reveals the presence of variolous pustules on the mucous membrane of the respiratory and digestive organs. The disease does not appear to be very infectious, though it is contagious and inoculable. It appears to be communicable to mankind, for Bösenroth† saw the disease

* Gurlt and Hertwig, Magazin für Thierheilkunde, band x.
† Magazin für Thierheilkunde, 1860, p. 341.

affecting dogs around the nose, face, eyes, and back, and the attendant became infected. The dog does not appear to be very susceptible to the Variolæ of other animals, nor yet to that of man. I can find few instances mentioned in which Small-pox was communicated to this creature, notwithstanding its very close association with mankind, and consequent exposure to infection.* Greve inoculated eight dogs with the matter of human Small-pox, and three of them became covered with pustules and died. Vaccination only develops insignificant bullæ containing pus; scarcely any "pit" remains.

I am not aware that Variola has ever been observed in the cat.

Camel-Pox.

The camel has long been known to suffer from Variola. Agnelli, in 1850, observed an outbreak among camels in Algeria, the symptoms of which were like those of Cow-pox, especially when transmitted to mankind. When the Arabs were inoculated with the lymph they were protected from Small-pox. Masson† makes similar remarks with regard to the camel in India. He mentions the accidental and artificial transmission of the disorder to the human species, and states that when children were inoculated from the camel they had a more or less general eruption, which was nearly always malignant, exceptionally mortal.

Variola in Hares and Rabbits.

Hares and rabbits are said to have a form of Variola, especially in North Germany, and which sometimes is very malignant. It has been believed for a long time, in those countries in which Sheep-pox is prevalent, that rabbits receive infection from these in grazing on the same pastures; and it has even been asserted that whole warrens have been cleared of their inmates by the transmitted disease. Astruc, Paulet, and Gasparin, a French authority and good observer, state that Sheep-pox is frequently conveyed to hares and rabbits; and the observations and experiments of Curds, Dominick, Spinola, and Gerlach support the statement. Inoculation from one to the other species has always yielded positive results.

Variola Gallinarum, Anserum, etc.

Fowls have also their Variola, according to the reports of various observers, published during many years. Bollinger has investigated what was supposed to be Variola in a poultry-yard at Zurich, but found it to be a contagious epithelioma, chiefly localised upon the head. But what appears to be a true Variola has often been studied in fowls, as the loss it caused was very great, and its contagiousness caused it to be widespread. In these outbreaks the birds were dull and feverish; the feathers stood erect; the wings and tail were pendulous, and an eruption of pustules appeared on the head, neck, and inner surface of the wings and thighs. In the turkey they appeared as citron-tinted vesicles, surrounded by a red areola. In from twelve to fifteen days after their development these pustules became crusted, the fever disappeared, and health gradually returned. In geese the

* The supposed cases of transmission are not at all conclusive. They are generally of the same kind as that detailed by a writer (G. A. C.) in the *Field* for September 2nd, 1871. "Two or three members of the family of a person who was rearing a beagle for me, were ill of Small-pox, and some of the bedclothes were being steeped in water preparatory to washing them. The beagle was seen to lap some of the water, and in a few days he died, covered with Small-pox. Cases of dogs taking the disease have happened, I believe, but very rarely."

† Narrative of a journey to Khelat, Trans. of Med. and Phys. Soc. of Bombay, 1840, p. 214.

pustules on the neck not unfrequently increased in size and formed abscesses; the feathers were shed, pieces of skin even became detached, and the resulting lesions were so serious that death was not an unusual termination. The disease was very contagious.

In the official report on the sanitary condition of the domesticated animals in Belgium during 1878, I find that Government Veterinary Surgeon Déjonghe, of Wyngene, describes this Variola of poultry. It prevailed as an intense enzoöty during the last half of 1878, frequently attacking all the fowls on a farm, and being most prevalent in low, damp situations. It was markedly contagious, or rather infectious, and the prevailing winds had apparently some influence in its dissemination. Young birds suffered most severely, and bad food aggravated its severity. The earliest observed symptoms were erect plumage (horripilation), complete indifference, *malaise*, and general prostration, anorexia, great thirst, ardent craving for cold water, and rapid emaciation. There appeared on the skin and visible mucous membranes numerous small nodules, which were soon transformed into pustules. Most frequently these pustules soon after their appearance ruptured, fetid matter escaped, and only superficial sores remained; these generally cicatrised rapidly. Where the skin was thick, cicatrices, often deep, remained. On the respiratory mucous membrane the pustular eruption caused an abundant formation of muco-pus, which sometimes caused death by obstructing the air-passages. Generally, however, a fatal termination seemed to be due to debility, septicæmia, or pyæmia. In birds which survived, complete recovery did not take place for a long time.

(To be continued.)

HONORARY ASSOCIATES OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.

THE following is the list of Honorary Foreign Associates elected by the Council of the Royal College of Veterinary Surgeons, on the nomination of the President, at the quarterly meeting held on October 13th. We regret there is not space to insert their claims to this high distinction; but their names will be familiar to many of our readers:—

France.

HENRI BOULEY, Inspector of the French Veterinary Schools, ex-President of the Paris Academy of Medicine, and Professor of Physiology at the Sorbonne.

A. CHAUVEAU, Doctor of Medicine, Director of the Lyons Veterinary School, and Professor of Comparative Pathology at the Lyons University.

F. SAINT-CYR, Professor at the Lyons Veterinary School.

C. BAILLET, Director of the Toulouse Veterinary School.

M. TOUSSAINT, Doctor of Medicine, Professor of Physiology at the Toulouse University and Veterinary School.

A. GOUBAUX, Director of the Alfort Veterinary School.

G. COLIN, Professor of Physiology at the Alfort Veterinary School.

E. DECROIX, Principal Veterinary Surgeon to the French Army.

P. MÉGNIN, Laureate of the Institute of France, Army Veterinary Surgeon.

Germany.

F. ROLOFF, Doctor of Medicine, Director of the Berlin Veterinary School.

C. F. MUELLER, Professor at the Berlin Veterinary School.
J. W. SCHÜTZ, Doctor of Medicine and Professor at the Berlin Veterinary School.
W. DIECKERHOFF, Professor at the Berlin Veterinary School.
C. H. HERTWIG, Doctor of Medicine, ex-Professor at the Berlin Veterinary School.
E. F. GURLT, Doctor of Medicine, ex-Professor at the Berlin Veterinary School.
K. GÜNTHER, Director of the Hanover Veterinary School.
C. HARMS, Doctor of Medicine, Professor at the Hanover Veterinary School.
L. FRANCK, Director of the Munich Veterinary School.
O. BOLLINGER, Doctor of Medicine, Professor at the Munich Veterinary School and University.
E. HERING, Doctor of Medicine, late Director of the Stuttgart Veterinary School.
W. FRICKER, Director of the Stuttgart Veterinary School.
F. A. ZÜRN, Doctor of Medicine, Professor of Veterinary Medicine at the University of Leipzig.
G. C. HAUBNER, Doctor of Medicine, Director of the Dresden Veterinary School.
A. G. LEISERING, Doctor of Medicine, Professor at the Dresden Veterinary School.
A. O. SIEDAMGROTZKY, Doctor of Medicine, Professor at the Dresden Veterinary School.
J. E. L. FALKE, Doctor of Medicine, Professor at the University of Jena.
A. LYDTIN, Veterinary Adviser to the Baden Government, Carlsruhe.
G. PFLUG, Doctor of Medicine, Professor of Veterinary Medicine at the University of Giessen.
H. PUTZ, Doctor of Medicine, Professor of Veterinary Medicine at the University of Halle.
A. ZUNDEL, Government Veterinary Surgeon at Strasbourg.
H. ANACKER, Doctor of Medicine, Government Veterinary Surgeon, Dusseldorf.
T. ADAM, Government Veterinary Surgeon, Augsburg.
C. F. HEÜSINGER, Doctor of Medicine, Erlangen.

Austria.

F. M. RÖLL, Doctor of Medicine, late Director of the Vienna Veterinary School.
F. MUELLER, Doctor of Medicine, Director of the Vienna Veterinary School.
A. BRUCKMULLER, Doctor of Medicine, Professor at the Vienna Veterinary School.
L. FORSTER, Doctor of Medicine, Professor at the Vienna Veterinary School.
TORMAY ADALBERT, Director of the Veterinary School at Buda-Pesth.

Belgium.

A. THIERNESSE, Director of the Brussels Veterinary School.
J. M. WEHENKEL, Doctor of Medicine, Professor at the Brussels Veterinary School and University.
M. LAHO, Professor at the Brussels Veterinary School.
A. DEGIVE, Professor at the Brussels Veterinary School.
E. DELE, Government Veterinary Surgeon, Antwerp.

Italy.

J. B. ERCOLANI, Count, Doctor of Medicine, Director of the Veterinary School at the Bologna University.
N. LANZILLOTTI-BUONSANTI, Doctor of Medicine, Director of the Milan Veterinary School.
E. PERRONCITO, Doctor of Medicine, Professor at the Milan Veterinary School.
M. GUZZONI, Doctor of Medicine, Professor at the Florence Veterinary School.
D. VALLADA, Director of the Turin Veterinary School.
R. BASSI, Professor at the Turin Veterinary School.
S. RIVOLTA, Doctor of Medicine, Professor at the University of Pisa.
S. ORESTE, Director of the Naples Veterinary School.
A. DE SILVESTRI, Professor at the Turin Veterinary School.
J. GENERALI, Director of the Modena Veterinary School.
P. DELPRATO, Director of the Veterinary School at the University of Parma.

Holland.

A. W. H. WIRTZ, Director of the Veterinary School at Utrecht.
F. C. HEKMEYER, Professor at the Utrecht Veterinary School.

Switzerland.

R. ZANNGER, Doctor of Medicine, Director of the Zurich Veterinary School.
V. NIEDERHAUSERN, Director of the Berne Veterinary School.

Russia.

P. SEIFMANN, Director of the Kasan Veterinary School.
F. UNTERBERGER, Director of the Dorpat Veterinary School.
E. SEMMER, Professor at the Dorpat Veterinary School.
H. SCHMOULEWITSCH, Veterinary Adviser to the Minister of the Interior at St. Petersburg.

Denmark.

H. KRABBE, Doctor of Medicine, Professor at the Copenhagen Veterinary School.

Sweden and Norway.

N. E. FORSSELL, Director of the Veterinary School at Skara.
J. G. H. KINBERG, Doctor of Medicine, Director of the Veterinary School at Stockholm.
C. LINDQUIST, Professor at the Stockholm Veterinary School.

United States of America.

A. LIAUTARD, Doctor of Medicine, Director of the American Veterinary College, New York.

EXTINCTION OF CONTAGIOUS PLEURO-PNEUMONIA IN HOLLAND.

THE measures applied by the Dutch Government for the extinction of Lung-plague, have been crowned with the utmost success. The decrease in the number of cases has been rapid since the adoption of these measures, and from September 4th until October 2nd, the date of last information, no cases had been reported. Holland has been recognised as free from contagious bovine maladies by the German Government, and restrictions

have been accordingly removed. It may be remembered that the measures adopted in Holland were, voluntary inoculation where Lung-plague was not in existence; but on infected farms slaughter of the cattle really diseased, and compulsory inoculation of those yet showing no signs of the malady, had to be carried out. The value of inoculation, as on other occasions, has been most clearly demonstrated, and has been proved to be as certain a protective as vaccination is of human Small-pox. The mortality following inoculation has been small, and no instance has been adduced of the disease having been spread or perpetuated by the operation. The experience of Holland dispels many notions entertained with regard to inoculation, and we can only regret that unfounded prejudice and narrow-mindedness have prevented this most valuable prophylactic from saving the country many thousands of pounds. We are content to have the disease, like the poor, always with us, and we slaughter entire herds of cattle which are not diseased, merely because our preconceived opinions will not allow us to save them by inoculation.

Proceedings of Veterinary Medical Societies, etc.

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL, HELD OCTOBER 27TH, 1880.

THE President, GEORGE FLEMING, Esq., in the chair.

Present:—Professors Axe and Pritchard; Messrs. Batt, Collins, Cox, Dollar, Dray, Dun, Gowing, Greaves, Harpley, Robertson, Taylor, Woods, and the Secretary. The notice was read convening the meeting.

The minutes of the previous meeting were read and confirmed.

Letters were read from Professors Walley and Williams, and Messrs. Coates, Freeman, Blakeway, Whittle, and Morgan, expressing their inability to attend the meeting.

A letter was read from the Norfolk and Eastern Counties Veterinary Medical Society, offering their assistance in procuring the Penal Act. The Secretary was directed to thank them for the offer of their support.

A letter was read from Mr. Archibald Robinson accepting the appointment as Examiner, and expressing his thanks to the Council for the honour conferred upon him.

House Committee.

The report was received, and assent was given by the Council to the request contained therein.

Winter Examinations.

The PRESIDENT said it had been notified by the Principal of the Royal Veterinary College that the first week in January would be a convenient time to commence the Examinations, and that they would occupy about six nights in London.

Notice of Resignation.

The PRESIDENT said he had given notice of resignation as a member of the Court of Examiners. He had done so on two grounds. In the first place, there had been an agitation since he was elected President with regard to a second Examiner being appointed at the Final Examination. The matter was brought on in a rather hasty and informal way at the meeting for the election of President and Vice-Presidents, and, of course, could not be then considered. When the matter was brought forward at a subsequent meeting

he expressed his views on the subject, and stated that he thought a personal reflection was cast upon himself; and after referring to the rumours which had been promulgated in a certain quarter of late, said that if a second Examiner were apppointed he should consider it a slur upon himself and would resign. The mover of the motion then brought forward another resolution, leaving it to the Financial Committee to consider whether a second Examiner should not also be appointed at the First and Second Examinations, but that Committee reported at the last meeting that the funds of the College would not allow of these second Examiners. The mover of the motion, who, unfortunately, was absent, then expressed his dissatisfaction with the state of the Examining Board, and announced his intention to have a Committee appointed to inquire into its condition. In a subsequent conversation he added that he had no particular desire to have second Examiners appointed at the First and Second Examinations, it being the Final Examination that he considered unsatisfactory. Before the close of the meeting he (the President), to obviate discussion on the matter, mentioned that the present Examiners would cease to hold office next year, but he afterwards found that their term did not expire till June, 1882. That being so, he thought it better to resign his office at once, and accordingly placed his resignation in their hands, thanking the Council for the honour conferred upon him by his appointment to this very responsible office, and assuring them that he had endeavoured to the utmost of his ability to carry out the duties appertaining to that high and honourable position. With regard to the question itself he could not help thinking that a second Examiner was not desirable, and was unnecessary. There had been no complaint as to the Examiners or the examinations that he was aware of, and if there was any grievance it would, most assuredly, be heard and considered by the Council. The mover of the motion himself knew little with regard to the procedure of the Examination or of the subjects which were examined upon at the table at which he wished to have a second Examiner appointed; his information, therefore, must have been derived from others, and if the rumours which were afloat were true, that source of information was most unreliable. Standing in that position he felt it necessary to place his resignation in their hands. The Examining Board should be beyond all blame or suspicion; it should suffer no stain whatever upon its reputation for impartiality or efficiency. Their College existed almost entirely as an Examining Body, and if any fault was found it should be remedied immediately. He had, therefore, decided to pursue this course, in order to enable the Council at once to deal with the matter.

Mr. DRAY said the announcement made by Mr. Fleming of his intended resignation as an Examiner would be received with unfeigned regret. His competency to perform the functions could not be impugned. When he (Mr. Dray) was President of the Council, he took opportunities of hearing Mr. Fleming examine the students, and could bear testimony to the kind and firm manner in which he treated the aspirants to veterinary honours. Why, then, should the Council accept the resignation of a gentleman whose attainments were unsurpassed, and whose indomitable perseverance and industry could not be equalled, and who was constantly and assiduously applying his energies to the furtherance of the interests of the profession of which he is so distinguished a member? (Applause.) He should therefore propose the following resolution:—"Resolved, that the intended resignation of Mr. Fleming, one of the Examiners of the Royal College of Veterinary Surgeons, be not accepted, he having fulfilled the duties with great satisfaction to the whole of the profession and justice to the students. The Council therefore hope and trust Mr. Fleming will reconsider his intention, and not abdicate a position for which he is so eminently qualified."

Mr. TAYLOR seconded the motion. He assured Mr. Fleming that in

retaining his office he would have the support of the whole Council, and not only of the Council, but of the whole of the profession.

Mr. GREAVES said he could reiterate every word uttered by Mr. Dray. They looked upon Mr. Fleming as one of the most efficient Examiners they could appoint. He believed the gentleman who had brought forward the motion, to which allusion had been made, had taken the steps he had from no feeling of disrespect to their President, or from the least wish to injure his high character. He (Mr. Greaves) was one of those who entertained the opinion that it would be well to have two Examiners, but finding that they could not afford two, must be content with one. There was no one man in the profession that he would choose in preference to Mr. Fleming. The honour of the profession was perfectly safe in his hands, and he hoped that the resignation would be withdrawn.

The PRESIDENT thanked the Council for their kind expressions. He did not bring forward the motion entirely on his own behalf, but because he felt that a grave professional question had arisen, and one very much affecting the honour of their whole corporation. He altogether exempted himself specially from the motion, and spoke entirely on behalf of the Royal College of Veterinary Surgeons, and on behalf of the best interests of the profession. (Hear, hear.) No incompetent student was wittingly passed by the Examiners, and any word of reproach on the Examiners was a great injustice to the Royal College. With these feelings he had brought the matter forward, and could only do so by tendering his resignation. He would willingly withdraw that resignation (applause), enjoying, as he did, their confidence; but only upon one condition, namely, that students presenting themselves for examination should come up by numbers only, and not by name. That course was pursued by the Royal College of Surgeons, and if it were adopted no one would then be able to say that the Examiners could have any partiality or enmity with regard to any particular school.

Mr. ROBERTSON seconded the suggestion. The fact was that the Examiners in Edinburgh had never been able to point out the students belonging to one school more than another. He was exceedingly pleased with the reception which the Council had given to the President's resignation, for certainly no man was better qualified than Mr. Fleming to act as an Examiner to the Royal College of Veterinary Surgeons.

Mr. DRAY said he was delighted that the President had withdrawn his resignation; at the same time he should like, with the permission of the Council, that his resolution should appear on the minutes.

The resolution was then put and unanimously adopted.

A resolution was also agreed to, on the motion of the PRESIDENT, seconded by Mr. ROBERTSON, "That hereafter students, instead of being admitted to examinations by name, be admitted by number."

Mr. TAYLOR read a paragraph from a Manchester paper of September 22nd, copied from the *Times*, relating to the new building of the Royal College of Veterinary Surgeons, and wished to know if the statement contained therein was correct.

The PRESIDENT said he was in utter ignorance of the source of the report, the latter portion of which was certainly incorrect.

SECOND SPECIAL MEETING.

The PRESIDENT said the first motion for confirmation was as follows:—"That no student receive the diploma of the Royal College of Veterinary Surgeons till he shall have attained the age of twenty years."

Mr. TAYLOR moved, and Mr. DRAY seconded, that this be now confirmed. The resolution was agreed to.

The next business was the confirmation of the bye-law with regard to the

pupilage of the candidate :—" That in and after the year 1884, no candidate present himself for the diploma until he shall have given proof of having received at least one year's pupilage from a qualified member of the profession."

Mr. DRAY moved that this be confirmed.

Mr. GREAVES seconded the motion.

Mr. ROBERTSON said he did not think the Council had power to take such a step. He believed the schools would protest against it, and take legal advice upon it.

The PRESIDENT said the Council was not acting without advice. In December, 1878, an opinion was given by an eminent lawyer that the Council had power to enforce anything that was necessary with regard to the education of students.

Mr. ROBERTSON said the Council certainly had power to examine the candidates as they chose, but he thought they had no power to prescribe how they were to obtain their knowledge.

The PRESIDENT said the subject was fully discussed at the last meeting. If the Council had been acting on an erroneous opinion the bye-law could be cancelled.

The resolution was then agreed to.

PROFESSOR AXE then moved as an instruction to the colleges :—" That all students entering the several colleges after the 1st January, 1881, be required to produce a register of birth, or other satisfactory evidence of their having attained the age of twenty years, before receiving the diploma of the Royal College of Veterinary Surgeons."

The resolution was seconded and agreed to.

On the motion of the PRESIDENT, the Council directed that copies of these bye-laws be sent to the principals of each of the schools.

A vote of thanks to the President brought the proceedings to a close.

EDINBURGH VETERINARY COLLEGE.

ON October 20th the winter session of the Edinburgh Veterinary College was opened with an address by Principal Walley. There was a large attendance of students and others. Amongst those present were—the Lord Provost, Convener Williams, Councillor Hay, Councillor Sloan, Councillor Tait, Mr. Alexander Harris, secretary to the College Council; Mr. Moir, Mr. Samuel Wilson, etc.

The LORD PROVOST, in opening the proceedings, said he was glad to state that the last session was a very prosperous one. The number of students had increased, the professors worked harmoniously together and did their very best for the students, while the examinations were of the most satisfactory character. He wished the College continued prosperity and success in all its departments; and, in the name of the Dick Trust, he acknowledged their obligations for prizes given by the Highland and Agricultural Society, Councillor Waldie, Dr. Alexander Wood, Mr. Kirk, and others.

Principal WALLEY then delivered the following address :—

The subject-matter of my address to-day is devoted to the consideration of —Firstly, Veterinary Quackery; secondly, the Relation of the Veterinary Profession to the Public.

Veterinary Quackery may be divided into *lay* and *professional. Lay quackery* is made up of a variety of degrees. Firstly, we have the *general public*, or at least that part of it whose daily occupation brings them in contact with domestic animals—*i.e.*, stock-owners, coachmen, grooms, shoeing-smiths, cowherds, shepherds, gamekeepers, and even saddlers. Each and

all of these consider themselves qualified to dabble in the mysteries of the art and science of veterinary medicine and surgery. The stock-owner, because he observes the habits of his animals, and directs their feeding; the coachman, because he guides his horses in the way he would have them go; the groom, because he cleans the skins of the animals under his charge; the shoeing-smith, because he pares the feet of horses and affixes thereon shoes; the cowherds, shepherd, and keeper, because they have the general welfare of the different animals in their hands; and lastly, the saddler, because he cuts up the hide of one animal to fit on to the back, neck, and head of another. Cogent reasons are these all for possessing an intimate knowledge of the anatomy and physiology of the animal body, the processes of disease, and the action and doses of the most deadly, equally with the most simple, of drugs! Of the whole of this class of quacks, there is only one of whom it may be said that he possesses any right to treat, or rather torture, the animal creation, and that is the stock-owner, who may claim the right to do as it seemeth him best with his own property.

Secondly, we have a class of men arising out of the foregoing, who style themselves farriers, cow-leeches, cow-doctors, horse-doctors, and in some cases even aspire to the title of veterinary surgeons. Hundreds of these men are wholly illiterate, cannot even write their own names; work, as the mediciners of old, by chance, or by the aid of ancient and well-thumbed recipes; or, in the case of those who can read, by the aid of books, the one-twentieth part of whose contents they cannot understand. Some of this class undoubtedly obtain their knowledge by a kind of intuition, or from a species of inspiration, which makes them born curers of all the diseases to which animal flesh is heir; nay, I know of one well-authenticated instance where one of these, heaven-born animal doctors actually took a copy of Bunyan's "Pilgrim's Progress" for his guide and counseller, or rather, as the means of gulling his employers.

Thirdly, a much larger class than even the foregoing is composed of chemists and druggists, chemical manufacturers, and manufacturers of artificial food for horses, cattle, sheep, dogs, pigs, and poultry. Every druggist considers himself capable of prescribing for, and treating the diseases of animals, and often of the nobler animal, man, though he may be absolutely incapable of administering a dose of medicine, knows not into what part of the digestive tract it passes, or by what means it produces its effects; and he has to take as his guide for treatment garbled statements of an ignorant messenger as to the supposed disease from which his patient is suffering.

The manufacturer of chemicals embraces in his grasp a wider field, he prepares (wholesale) draughts, balls, powders, pills, liniments, lotions, and ointments. Enfolds the vehicles which contain them in showy wrappers, on which is printed an elaborate description of their virtues; gives minute directions as to their administration, dubs them with some high-sounding name, and either himself or through the medium of an agent hawks them about from fair to fair, market to market, and show to show, lauding their virtues and descanting upon their merits like a veritable "Barnum."

Of the manufacturers of artificial food it may be said, that once a man begins to mix up a condiment, bake a biscuit, or compound a cake, he very soon persuades himself that he is equally capable of dispensing a condition ball or a Mange dressing.

There exists a number of animal doctors only one degree removed from those who are entitled to call themselves veterinary surgeons, and who usually adopt the title of the latter. Of all the unqualified practitioners of veterinary medicine these occupy the highest place; many of them are men who have had a good preliminary education, have profited by a fair amount of theoretical and practical training, take advantage of the teaching of scientific

works and periodicals, and aim at making themselves *au fait* in the profession which they have chosen. Many there are amongst them who are well worthy of all the honours and distinctions which the parliament of our profession can bestow on them, and who, from no fault of their own, have stopped short on the threshold of obtaining the right to attach the title of veterinary surgeon to their names.

Last, but not least, amongst the motley crew, we often have the practitioner of human medicine, who, stepping out of his legitimate sphere, assumes a knowledge of diseases whose nature he never studied, of animals with whose habits and peculiarities he is totally unacquainted, and of the action of drugs upon whose bodies he judges by the effects which he knows will follow their administration to his fellow creatures. To their honour be it said, the great bulk of physicians and surgeons neither offer to treat the diseases of animals or to give opinions as to their nature and seat, confessing candidly that it is outside their calling; but on the other hand, there are many who will unblushingly prescribe for horse, cow, ox, or dog, and who will unhesitatingly pit their opinion against that of the most accomplished veterinary surgeon.

Now, how is it that such an army of animal doctors (many of them parasites and impostors) exist? I suppose it is owing to the fact that everybody likes to meddle with every other body's business, and to the further fact that in these days of close competition and overcrowding, everybody is looking about him to see by what means he can add to his very often scanty and uncertain income—even of our own profession is the charge often true; we are all descendants of the same parents, and consequently we inherit their fatal propensity to inquisitiveness, and their tendency to meddle with things which concern us not.

That amongst this host of charlatans and empirics there are many who do good work, who are the means of saving much valuable life and property, who deserve well of their fellow-men, and who fill up gaps in the subsidiary ranks of our profession, I am more than willing to own; but there are many who, directly or indirectly, destroy more lives than they save, and who cause more torture and suffering than they alleviate—and all do a great injustice to the regular practitioner who has spent the best years of his life, and often the whole of his patrimony, in qualifying himself for the noble and useful calling to which he is devoted. Quack medicines are often the means of lulling the owners of stock into a sense of false security. Relying upon the exaggerated statements made or written of their virtues, they put off, hour after hour, seeking to obtain the assistance of those whose calling it is to check the advances of disease, until they find that the malady has stolen a march upon them, that they have been working in the dark, or applying the remedy to a totally different part, or for an opposite purpose, than that for which it was intended; and while the vendor of quack remedies is sleeping serenely in his bed, or snoring loudly on his pillow of down, the veterinary surgeon is turned out of comfortable quarters to hurry many miles, often through frost and snow, hail and rain, to remedy the mischief his nostrums have wrought, or to inform the owner of the murdered victim that his skill is powerless to arrest the onward march of the fell malady, or to restore his animal to usefulness, and in hundreds of cases after straining every nerve to give his patient relief, he has the melancholy satisfaction of watching it die; or, again, of arriving just in time to hear the last gasp, or to witness the last struggle.

None but the initiated know that by practising empirics all forms of gross cruelty are daily perpetrated, and all kinds of criminal blunders made, to which the pain of a sore back or sore shoulder is as a flea-bite to a sword-thrust, as witness the repeated application of aqua fortis to the skin of the hock (in Spavin) until a huge slough is induced; the insertion of skewers through the

flesh and skin in fractured bone ; the cutting out of the haw, and the worming of the mouth in the dog to prevent Distemper, or the so-called nerving of cattle to prevent Black-leg ; the cutting away of large portions of the intestine in Hernia, the employment of brute force in parturition and the allowing of disease to take its course unchecked as exemplified in the specimen of a horse's head which I here show you. Like his human prototype—who prescribes for the most serious ailments in his fellow-men, but takes care to send for the qualified practitioner when he is himself ill—the veterinary pretender, however apt he may be in doctoring his neighbours' cattle or horses, soon seeks for other aid when there is a probability of his pocket being lightened by the loss of one of his own animals.

The supposed cures which many of these men make are often marvellous in their character, and when a patient dies an easy solution of the cause of death is found in the shape of a clot of blood in the heart, or in the flow of blood towards the head, neither of which occurrences could have been prevented—it is often confidently averred—by the best man breathing. The boldness, too, of many of these men in undertaking hopeless cases is only equalled by their ignorance of their nature ; here, as in many other walks in life, "devils enter in where angels fear to tread." Knowing nothing of the importance or nature of the structures upon which he is operating, the charlatan has no fear in performing the most severe operations ; and not having one to lose, the probable effect of a failure on his reputation is not taken into consideration.

The explanation of the success of quackery in all its forms is not far to seek ; it is found in the ready gullibility of the great mass of the general public, and in that constant yearning after the miraculous and marvellous, which is so pronounced in the ignorant part of our populations ; and in these attributes, too, are found the secret of the pseudo-success of Madame Enault, and many other similar plausible and shameful empirics. Most people are agreed that "a rose would smell as sweet if it were called a thistle," and an apricot would be equally luscious though designated a potato," but these truisms do not apply to the preparations of medicine, which, supplied by the regular practitioner, for specific purposes, are not deemed so efficacious as when purchased from the vendor of quack remedies, and dubbed with a high-sounding and attractive title.

Under the second head of my discourse we have to consider "Professional Empiricism."

To assert that a veterinary surgeon who has received a regular professional education and is legally qualified, cannot be an empiric, is a mistake. Unfortunately there are many amongst us who are but little removed from the most ordinary of lay practitioners, who are content to go on quietly through life without making the slightest effort to understand the character of the diseases they treat or the action of the remedies they employ ; but even such as these are less blamable than those who degrade their professional standing by allowing their names to be associated with the most unblushing impostures, and who countenance the most arrant quackery. By, in some—fortunately, not many—instances, linking their fortunes with those of the quack, they prostitute an honourable title for the purpose of getting gain.

Thus when we see a self-styled Professor of Veterinary Canine Pathology, announcing himself as successor to several deceased professional men, informing the public in one breath that "poodles are shaved in true Parisian style," and in the next that "night, or cases which require attendance when the surgery is closed, will receive skilful and diligent attention upon application to Mr. S——, M.R.C.V.S.," it is time we blushed at the absence of dignity and self-respect displayed by some amongst us ; and almost on a par with this is the advertisement of another M.R.C.V.S., who announces that

he prepares "Pills for the Roup in fowls," and that the said pills "promote the laying of eggs in large quantities, forward chicks, and remove Cramp;" or with still another, who boldly requests "the owners of horses to test his system of treatment of disease against that of his neighbour, by placing a hundred horses under his charge by way of instituting a comparison between the relative merits of his superlatively preferable treatment and that of his brother practitioner." These are one or two instances of the level to which some men are content to lower themselves and their profession; but I hasten to draw a veil over such men and their doings, and leave them in the position which they appear to be content to occupy. That the practice of veterinary medicine must, to a great extent, be tainted with empiricism, is an undeniable fact; but is the practice of the sister profession in a much better position? No! with all the great advantages he possesses of obtaining accurate evidence of disease, and of the improved means of diagnosis, the practitioner of human medicine works equally in the dark with ourselves, and administers—quite as often as we do—medicines for the cure of disease, of whose action he knows but little. And so far empiricism will be, and must be, an attribute of our profession; and though we have arrived at a wonderful degree of accuracy in diagnosing and combating diseases, mistakes will—until some inventive genius discovers a means of rendering the body transparent—inevitably occur in both professions. *Bath Stoves* "for bringing hidden diseases out of the bones and inward parts," *Elixirs* "to restore life to the dying," and *Balls and Pills* "to cure all ills," do not form part of the armament of the veterinary surgeon; he has to be content with less ambitious and less potent weapons. But even with these, I again assert, it is wonderful to what a large extent he has the power of healing, relieving, and soothing the diseases and pains of the suffering brute creation, and in the possession of this power he has good reason to rejoice and to be exceeding glad.

The last division of my address is, "The Relation of the Veterinary Surgeon to the Public."

In considering this I must at the outset disclaim any desire to place the position of the veterinary surgeon on an equality with that of the practitioner of human medicine, but only in a relative degree.

The value of animal-life can never be approximated—directly, at least—to that of human life in the mind of reasoning people; nevertheless, I have known individuals who would ride harder to obtain the aid of the veterinary surgeon than they would to obtain that of the doctor; I have heard others solemnly declare that they had sooner have lost many of their friends than their favourite dog. Much as I love animals, I could never place the life of the best beast that ever lived, in comparison with the value of one human soul. Every sentient creature in this world has its use, possesses a value peculiarly its own, and in its sphere cannot be replaced. But every animal has its place, and, however valuable it may be, is but an animal; nevertheless and while this is true, every creature that breathes can claim the care and, attention of man—can demand that it shall be mercifully treated, that it shall not be subjected to unnecessary cruelty, and that it shall not be forgotten when pain racks its nerves and disease wastes and destroys its frame; and it is our privilege—a glorious one, I contend—and our desire, to render the hard lives of very many of the brute creation at least bearable, and to relieve them of pain and suffering to the utmost extent of our power.

It is too much, and too frequently assumed that the province of the veterinary surgeon is that only of a curer of disease. He has a higher *rôle* than that to carry out, viz., that of a protector of the public from fraud and imposition, and animals from the effects of accidents and from preventible diseases. As a protector of the public, he has a very important function to

perform in the *examination of horses as to soundness*—a function which is not taken advantage of with sufficient frequency, to the great loss of purchasers in many cases. As I have said before with regard to disease, I say now with regard to examinations as to soundness. We cannot render a horse transparent, neither can we draw out hidden or incipient diseases, nor can we be expected to act as prophets; but we can, and very often do, protect purchasers against gross chicanery, for which the remuneration accorded is totally out of proportion to the services performed.

As protectors of the public, too, we have to see that they are not poisoned by diseased meat or vitiated milk; but unfortunately, this function is too often suppressed.

As protectors of animals against accidents and their effects, veterinary surgeons can claim a proud position—as proof of which I ask, where are the numerous cases of Poll Evil, of Fistulæ, of Quittor, that used to form so large a part of the veterinary surgeon's practice? The proportion of these in the present day to that of twenty or thirty years ago is probably about one to twenty, or less. Even in my own limited sphere I can show that where I had on an average five or six cases of Quittor to treat, I have now scarcely one, and in the case of preventible wounds and bruises the proportion is even greater. But the extent of our protective functions here is very limited, when compared with the work we perform in the prevention of contagious and sporadic diseases. Not only is this work performed in our every-day practice, but on a far larger scale by those who are engaged in carrying out the orders of the Privy Council, and here we can point with pride to the enormous diminution in the number of cases of contagious diseases throughout the kingdom within the last two years. Witness the decline of Lung Disease and of Foot-and-Mouth Disease in cattle; witness, too, the rapid stamping out of Glanders and Farcy in horses, and Rinderpest in cattle, when an outbreak of these diseases is brought under the cognizance of the veterinary authorities; witness the detection of contagious disease at the ports of debarkation, at different times, by the veterinary officers of the Privy Council. I hope it will not be thought that I am making too bold an assertion when I say that there is no contagious disease to which animals in this country are liable, that cannot be quickly and effectually got rid of if prompt and energetic measures are adopted at its first appearance.

Since the services of the members of the veterinary profession have been called into requisition, and their abilities have been acknowledged by the Veterinary Department of the Privy Council, that department has, like the octopus—only more benevolently than in the case of that hydra-armed monster—stretched out its arms in various directions, in order to seize hold of victims in the shape of contagious diseases; but there are yet insidious enemies stalking free and unmolested in our midst, about whose bodies the prophylactic legislative mollusc requires to wind its merciless arms. I allude to Anthrax Disease, to Tuberculosis, to Trichinosis, and to Rot in sheep, in particular; and there are still others around which the cordon requires to be still more tightly drawn than is the case at present—notably in regard to Rabies in dogs, and Glanders and Farcy in horses.

In days gone by, "the *wooden* walls of Old England," was a saying common in the mouths of all classes; in these beef-eating days we shall more appropriately speak of the "*carnal* walls of Great Britain." Now that the consumption of animal food has so largely and so universally increased, it becomes a matter of the highest importance that our flocks and herds should be protected against the invasion and extension of disease, either exotic or indigenous; and in order that this protection may be afforded, Veterinary Sanitary Science must be encouraged, supported, and extended. In no country in the world has this science been most undervalued than in

the United States, and what is the result? Why, the ravaging of large tracts of country by contagious disease. Veterinary Sanitary Science there is in its infancy, and I can offer you no stronger proof of this than in telling you what occurred the other day in reference to Lung Disease. When in the House of Commons during the last session an attempt was made to obtain the removal in the restrictions on the importation of United States cattle, the authorities declined to entertain such proposals, they founded their declinations on the fact, not generally known, that numbers of animals were weekly arriving in imports which were the subject of the malady. I say this fact was not generally known; it was not known to the States authorities themselves, or, if it was, they conveniently ignored it—at least, if we may judge them by their action in sending a veterinary commissioner through the States and on to Great Britain to collect evidence with the object of proving that the cattle which were condemned at Liverpool, from aboard the s.s. "Ontario," were not the subject of Pleuro-pneumonia.

This action on the part of the United States Government proves the statement I just now made, that Veterinary Sanitary Science is in its infancy in the States; and, if I am rightly informed, it proves it in this way, that the veterinary commissioner before mentioned has returned to his own country with the determination of recommending the authorities there to extend their veterinary sanitary laws. In all countries where these laws are understood and enforced, contagious diseases have little chance of obtaining a foothold, and when they do they are quickly eradicated.

The protective agency of Veterinary Sanitary Science is capable of being extended in other ways than that of the prevention and suppression of contagious diseases amongst animals themselves; it can, where brought into requisition, largely prevent the extension of these diseases from animals to man through the medium of milk and flesh. Now that medical science has been so prominently directed to the probability of the transmission of disease from the ox to man, the question is being asked by medical authorities—Why is there no systematic inspection of our dairies? And the question may be well asked in view of the discoveries which have been made in recent times in reference to the transmission of Consumption by the medium of the milk and the juices of flesh, and the dissemination of Typhoid Fever from dairies.

Few have had better opportunities than myself of judging of the value of a thorough and systematic inspection of dairies, and I am satisfied that it has its value in more than one direction, and that by its aid the owners of dairy-cows will ultimately be brought to see, and to acknowledge that it is not to their advantage to keep unhealthy animals about them. Speaking of the dairymen of Edinburgh and Leith, I can truly say that, almost without a single exception, whenever I have pointed out to them the inadvisability of keeping an unhealthy animal on their premises, they have promptly taken steps for its removal. And it is, I believe, a fact that at the present moment not a single case of contagious disease exists in our byres; nor, so far as I have been able to carry out my periodical autumnal inspections, are there any cases of sporadic disease.

To you, gentlemen, students of the College, I will, before I conclude, address a few remarks; and I will preface them by asking you one question, which I recommend you to consider seriously before giving an answer. That question is, for what purpose are you here? Has a desire to gain prompted you to embrace the veterinary profession as your life's calling, or a desire to be of use to your fellow-men and to the suffering brute creation, or is your object to obtain what you consider access to an easy life in some public appointment? The answer to this threefold question will determine the kind and degree of work you will expend in obtaining a knowledge of our

profession, and will determine, too, your future usefulness, not only in the body corporate of your calling, but in what is of more consequence, in the body corporate of the great human family. To those of you who have entered the profession with a view solely of obtaining gain, let me say that although the attainment of wealth is undoubtedly the great aim of the great mass of mankind, and on the whole a laudable and commendable aim when it is prosecuted honestly and honourably, it is a game which, like other games, soon absorbs all the energies, all the brain, soul, and mind (to the exclusion of other objects), of those who play at it as the only game worth engaging in ; and when the game is won, its value is counterbalanced by the fact that that which you have gained will, sooner or later, have to be relinquished to others, whose use of it may be a satire upon the pains which you have taken to win it. Moreover, I must tell you candidiy, that in these days of overcrowding and competition the veterinary profession has financially, if not scientifically, to contend with many opposing forces. Prizes there are, as in all other professions ; and these prizes are open to each and all of you who try to obtain them ; and what is more, there are many opportunities now of making an honourable livelihood and an honourable name which did not exist a few years ago ; neverthelesss, in many practices the gains, except where questionable methods of increasing them are adopted, are not great, and in many districts the services of the veterinary surgeon are but meanly rewarded, and certainly, on the whole, much more meanly than are those of the human surgeon. I know it will be urged that the services of the latter are of more importance to the community, but he has to carry them out under more favourable conditions than the veterinary surgeon ; granted, he runs the risk of contracting contagious diseases, but so do we, and two of the most horrible which afflict humanity. The surgeon may occasionally meet with abuse from his patients, but it is generally in the shape of a scolding, while we are exposed to the possibility of being kicked, bitten, and bruised in a variety of ways ; and our work—often of the most arduous and of the most trying kind—has to be carried on under many circumstances of discomfort and hardship, and when all is finished the fee exigible for journeys is often less than the hire accepted by a cabman or coach-owners.

If you join the profession with the second object in view, you have ample means of obtaining it at your disposal. There is a great field for veterinary pathological work still unexplored, and this will be the case for a very long period, seeing that our profession receives no extraneous aid in its scientific researches—all has to he done by individuals, most of them with very scanty means at their disposal, and the wonder is, not that the veterinary profession has not made greater strides, but that it has, unaided, and to a great extent unencouraged, attained to the position which it occupies to-day. The medical and other professions have in the past received, and are now receiving, large subsidies from Government and other sources to enable them to carry on scientific investigations, and not infrequently do moneys go to these which ought to go to us. But as we have not been discouraged in the past, so we shall not be dismayed by the work before us in the future.

Gentlemen, with you the advancement in the next generation of veterinary science will largely rest ; upon the use of your time now will depend its position then. Absorb all the knowledge you can, but don't suck it in as the sponge does water—assimilate it, rather, as your body does food ; and before you attempt to apply it practically, see that you take the means—always open to you—of obtaining a thorough acquaintance with the practical aspect of your profession. Those of you who have not been engaged in practice, must not imagine that a short course here, and the obtaining of your diploma, will qualify you for practice—you must take steps to do this either during your

curriculum or subsequently. And I would particularly ask you to study the principles which guide us in the application of remedies to disease, and to avoid, as far as possible, empiricism of all shades. One great lesson you will have to learn, and that is, how to assist, and not to thwart, nature. The practitioner of the past, in treating a horse with Pneumonia, did all he could to handicap nature in her efforts at restoration by weakening her forces by bleeding and the administration of Tartar Emetic and physic; the practitioner of to-day holds out a helping hand to nature by carefully nursing her patient's strength, by giving a fillip when required to the vital forces, and by jealously anticipating and combating untoward complications.

Lastly, if you have joined the profession with the third object mentioned by me in view, all I can say is, that I pity you. I pity the profession which may count you as a member, I pity the animals which may unfortunately come under your charge. Your studies, gentlemen, should not cease when you leave the shadow of these walls behind you, rather let them be to you a stimulus to further effort, and let their result be stepping-stones upon which you may attain to a higher and more honourable position in the world. If you want examples to encourage you to persevere in the pursuit of knowledge, you have them in the success of two gentlemen intimately connected with us, viz., Professor McFadyean and Mr. Grey, in the respective classes of natural history and practical pathological anatomy during the past summer session at the University. These, and such as these, gentlemen, are the examples I would have you follow both now and hereafter and to those of you who are minded, I wish, most heartily, every success.

Convener WILLIAMS moved a vote of thanks to Principal Walley for his address.

Councillor HAY seconded the motion, and said that the Town Council were deeply interested in the welfare of this noble institution.

On the motion of Councillor TAIT, a vote of thanks was given to Convener Williams for presiding during a part of the meeting; and the proceedings terminated.

GLASGOW VETERINARY COLLEGE.

THE Introductory Lecture to the Winter Session of the Glasgow Veterinary College was delivered on October 20th, by F. W. Clark, Esq., LL.D., Sheriff-Principal of Lanarkshire. Principal M'Call occupied the chair; and in addition to the students, a large number of members of the profession were present.

Sheriff CLARK, who was introduced by the Chairman, said—When I was asked to deliver the Introductory Lecture at the Winter Session of this admirable Institution, which is now rapidly attaining deserved celebrity, it was with no little hesitation that I accepted the honour. My almost entire ignorance of veterinary medicine—except in so far as reading may have given me some small acquaintance with its theory and history—seemed to forbid the hope that I could be of any real service. Yet as I am warmly interested in the progress of a profession fraught with so much practical utility, and promising so much towards the advancement of science, I could not refuse to accede to the solicitations of your Principal, to make some general observations that might tend in some degree to stimulate your labours. Veterinary medicine must have come into existence as soon as man began to domesticate the inferior animals; and that this took place at a very remote era is amply proved by the remains of the horse, the ox, the goat, the dog, etc., being found in ancient *tumuli*, lake-dwellings, and caves, intermingled with the bones of primeval man. It is also established by the fact, that among all the members of the Aryan race the names of the

domestic animals still bear the marks of a common origin at that distant pre-historic period when, before their separation into Greeks, Celts, Goths, Sclavs, Hindoos, Persians, the common ancestry dwelt together and spoke the same language in Northern India. From the Greek writers we can see that the veterinary art was studied in ancient Egypt. From thence it would seem to have passed into Greece, where the great care bestowed on the breeds of cattle, and particularly of horses and hunting dogs, and the great success with which that care was rewarded, incontestably prove that the veterinary profession had at least made great progress as an art. From the notices of Greek writers we see that many treatises existed on the diseases of domestic animals—that by Hippocrates, a celebrated physician of Cos, was deemed the best. We must regret that most of them have been lost; yet any one who reads Xenophon's work on the horse cannot fail to see that he lived in an age when the veterinary art had been carefully studied. During the flourishing period of the Roman Empire, veterinary medicine made great progress, as might be expected among a people eminently practical, whose vast military establishment required continual remounts for the cavalry service, and who was unweariedly employed in improving the breeds of domestic animals. That awful catastrophe in the history of the human race known as the fall of the Roman Empire, and the night of darkness that followed, have deprived us of the greater part of ancient literature. Among other losses, we have to deplore that of many works on veterinary medicine, the names of whose authors alone remain. Yet enough remains to show how carefully the art had been studied, and what progress it had made towards the dignity of a science. Upon this subject I would refer to the treatises of Marcus Cato, of Terentius Varro, of Columella, of Palladius, of Vegetius, and the fragment of Gargilius Martialis—all of which, directly or indirectly, deal with the veterinary art. The celebrated work of the elder Pliny—Plinius Major—on natural history may also be consulted as throwing light on the veterinary medicine of his day; so also may the philosophic poem of Lucretius—*De Rerum Natura.* Every one has seen the earlier work of Virgil, in which, in immortal verse, he treats of the breeding and rearing of cattle and horses among the other cares of the husbandman. Many have wondered how a poet should know so much of such a subject. The wonder abates when we find it recorded by Donatus that, after completing a course of medicine and mathematics, the youthful poet studied veterinary surgery for a considerable time, was employed in the stables of Augustus Cæsar, and was first brought under the notice of that emperor by his skill in the art. On the fall of the Roman Empire, veterinary medicine like other departments of science, ceased to be cultivated, and for a long period fell into the position of a handicraft, in which smiths, shepherds, or herdsmen empirically practised such treatment as tradition taught or experience suggested. It was about this time that the blacksmith or farrier came to the front and began to assert himself as the great depositary of the veterinary art. In classic antiquity, horses were not usually shod with iron; and even when metal was used for that purpose, it was commonly fastened to the hoof, not with nails, but with thongs or latchets, like a sandal. It was among the barbaric hordes which overran the Roman Empire that the iron shoe, fastened with nails, came into vogue, much about the same time that the tree saddle, with stirrups, was invented. How such obvious improvements in the equestrian art should not have been earlier adopted, is one of those curious facts in the history of mankind that have never been fully explained. The fact is certain that the classic languages of antiquity contain no words for horseshoes, saddles, or stirrups, in their modern sense. Now, the saddle throughout the middle ages—at least, when used for military purposes—was formed of steel or iron, and was consequently the work of the

smith. To the smith also belonged the forging of the iron shoe and the driving of the nails. The last operation, as we all know, required no small skill, and the smith often caused injuries to the hoof, which he had to do his best to cure. About the same time, also, the use of the actual cautery became common, and from these combined causes it is easy to see how the farrier came to be regarded as an authority in veterinary medicine. Nor were the ancient farriers the rude blacksmiths into which they ultimately degenerated. They were the forgers of armour, both defensive and offensive, at a time when that art was much more highly cultivated than it has ever been since the invention of gunpowder. They were men often of great attainments in metallurgy and chemistry. As time wore on, a great change took place in the military art. The armies of Greece and Rome had been mainly composed of a highly-disciplined infantry. With the institution of chivalry, this (about the ninth century) was entirely changed. The strength of the mediæval armies came to consist almost entirely of heavy cavalry, in which man and horse were completely covered with defensive armour, so that the medium weight to be carried by the knightly charger was no less than 30 stones. A peculiar kind of horse called a "destrier," and now lost, was required for this purpose—combining great strength with still greater energy—not, indeed, for speed, but for rapid evolution, so that the knight might wield his heavy lance and battle-axe with great advantage in close combat. These horses were procured at vast expense in Spain and Italy; and, when procured, were subjected to an elaborate training of years, until they obeyed the slightest movement of wrist or heel, and played nearly as important a part in the *mêlée* as did their riders. This severe training, and the exertions they had to make on service, subjected them to continual strains and diseases; but as their value was great, every means of prevention or cure was eagerly sought after. The practice of covering the horse in every part with defensive armour also drew after it important consequences. His ears were cropped out close to the head to permit the covering of mail to fit closely; and for the same reason his tail was not docked, but dug out close to the croup. Moreover, this heavy panoply of iron exposed the horse to alternate sweats and chills that proved highly destructive. Such things necessitated some knowledge of surgery and medicine. And here came in the important part played by the riding-masters or maréschals of the day. It was the profession of these gentlemen to procure and train such horses, and afterwards to direct their treatment. Hence they carefully studied the nature and constitution of the horse, and generally possessed the highest degree of veterinary skill known at the time. In Spain, Italy, France, and Germany riding-schools, called academies, were established. Some of them obtained a world-wide celebrity. Numerous works on the ménage—that is, military riding, emanated from them, and to each was always attached a treatise on the veterinary art. In so high estimation was this combination of riding-master and veterinary surgeon held, that it was exercised by the highest of the military nobles. It is a very significant fact that the French word "maréschal," which denotes the highest military officer in France, originally meant a veterinary surgeon, and is still used as the name for a farrier. With the introduction of gunpowder chivalry was extinguished, heavy cavalry fell into disuse, and the armies of Europe came to consist mainly of infantry. This revolution brought about the decline of the old maréschals, with all their science and traditions, and that art which kings and nobles had loved to teach fell into the hands of obscure practitioners with little more science than that possessed by a huntsman or trainer for the turf. The Marquis of Newcastle, whose celebrated work appeared about 1680, was the last of the great military riding-masters; and though after his time his humbler brethren made a gallant struggle to maintain their ancient

renown, they steadily declined, and the science of the riding-school gave way to that of the turf. The result of this was that the veterinary art was fast passing into the hands of blacksmiths, now no longer armourers, and was in danger of tumbling from a profession to a trade. Coincidentally, however, with the decline of the professors of military equitation, arose the first pioneers of the science of veterinary surgery, properly so called. In Italy, as early as 1618, appeared the work of Carlo Ruini, on the diseases of the horse, profusely illustrated with superb engravings. This was followed, in France by the "Grand Maréschal Francois," a work of great erudition. Soon after appeared "Le Parfait Maréschal," by Sollysel, and this was translated into English, or rather Scotch, by Sir William Hope. From that time numerous treatises appear all over Europe, all having for their object to rescue the veterinary art from obscurity, and bring it into the form of a science. Several of these writers, such as Gibson, Bracken, La Fosse, and Osmer, were medical men of eminence. They did much to free the veterinary art from blind empiricism. Yet their practice and prescriptions, though vast improvements on those of their day, are tinged with cruelties and puerilities at which an ordinary strapper would now stand amazed. At this we need not be astonished. Those were the days when medicine and surgery, even as applied to the human patient, were of such a kind that we do not marvel that so few were cured, but that any one escaped alive from the hands of the learned faculty. At length, as ordinary medicine began to improve, veterinary science followed in its wake. In Italy some veterinary colleges, of which little is known, were in existence in the beginning of last century. But it was not till 1761 that the first veterinary college was founded in France, at Lyons, under the well-known Bourgelât. This was followed by the now celebrated school of Alfort, founded in 1766. In 1792 the Veterinary College of London was founded, Charles Vial de Sainbel and Delabère Blaine being the first professors; and the work of the latter, which has passed through numerous editions, is still highly prized. Since then veterinary colleges have been formed in every European capital, and in many of the principal cities. In Scotland, Professor Dick founded a veterinary school at Edinburgh, and in Glasgow our worthy Principal has succeeded in establishing this college, which has already become an honour to the kingdom, and for which a great future is, I doubt not, reserved. (Loud applause.) Veterinary medicine has now reached a position to which even in the most brilliant days of Greece and Rome it certainly never attained. It is no longer a mere art; it has become a science, and a science of vast range and vast importance. It has passed out of the stage of empiricism. Its professors are no longer content to do or prescribe what they have seen done or prescribed before. They wish to know the reasons of the practice they adopt; they wish to interrogate nature by experiment and observation; they seek to collect and arrange facts over the widest areas, and by every variety of means, and they labour to evolve from the materials so collected the concealed laws or tenors of action by which nature may be supposed to work. They do not reject theory, but they insist on bringing the most plausible theories to the test of experiment. Unlike their predecessors, they do not compel fact to square with a favourite theory; they regard theory as valuable only when it harmonizes with and serves to explain fact. There is in the present day a circumstance that at once extends the bounds of veterinary science, and gives it an importance never felt before. You are all aware of the modern theory of evolution, based on what is termed natural selection or survival of the fittest in the continued struggle for existence. Its most ardent and advanced votaries claim for this theory the real explanation—not of the origin of creation, as some have supposed—but of the origin of species; in other words, the real cause of the various types of life heretofore and now existing on the earth. I cannot say that I am a

convert to this notion. I do not think that the ascertained facts are a sufficient basis to support the vast theory which is attempted to be reared on them. But whether I am right or not in this view, one thing, I think, has been clearly established, and that is, that among all the vertebrates—man included—the materials, organs, and structure of the body are so connected in accordance with some underlying plan or law, that all are in strict analogy, and are only adaptations of one common set to the wants and requirements of each separate species. This adaptation appears to be brought about by the processes of development, as though the great Creator had utilized certain typical organs for every purpose comprised within the beneficent scheme of animal life. Thus, to take two of the most divergent instances—the horse and man—the stifle joint of the horse is the analogue of the human knee, the hock of the heel, the single toe on which the horse walks is the analogue of the central digit in the human hand or foot, the other digits being represented in the existing horse by the splint-bones, which in the earlier equine species carried hoofs, and in still earlier forms appear to have reached the typical number of five. These, and thousands of similar analogues, do not, to my mind, prove community of origin, but they prove unity of plan, and strongly point to this, that if ever the sciences of life and curative medicine are to be prosecuted in an exhaustive and effectual manner, it must be by comparative anatomy, comparative physiology, comparative science—in short, universally. Veterinary science has thus assumed vast importance, and has come into line with human medicine and surgery. Neither of those two sciences can hereafter stand apart. The veterinarian has much to learn from the medical man, and the medical man from the veterinarian. Indeed, the time cannot be far distant when for all the higher purposes the two provinces of medical science must coalesce. If I am at all right in the views I have been indicating, it follows that not only is the profession to which you have devoted yourselves one of great importance, but important duties devolve upon you who are now its students, but will hereafter become each in his sphere its pioneers and advancers. Permit me, therefore, to give a few words of council which experience in a different line has impressed on my own mind. Every man should seek so to learn his profession that he may live by it. He who fails to do this may be said to fail in a primary and important duty. But if any man resolves to know only as much of his profession as shall enable him to maintain himself, his object in life is a very humble one, and the probability is that he will not even attain that object, humble though it may be. To succeed in any walk of life whatever requires it to be prosecuted with enthusiasm. But this is specially the case where the calling chosen is a profession—that is to say, not merely an art but a science. The veterinary profession has now definitely entered the circle of the sciences, and must therefore advance with increasing acceleration. He, therefore, who should cultivate it merely as an art, however well skilled he might be in the art when he left the college, would find in a few years that he was left high and dry by those who, perhaps though with inferior abilities, had chosen to follow the scientific stream. Nor is there any excuse for the veterinary student who does not prosecute his science with enthusiasm. The mere lawyer, after he has laboriously cultivated his profession for years, may find much of his laboriously acquired learning swept away by a new Act of Parliament. The veterinarian deals with the eternal verities of nature. Whatever truths he can attain to remain truths for ever, and become new points of departure for still more important verities. Small as the contribution may be which he may make to his science, if only it be truth, it is so not relatively but absolutely. Again, let me advise you to cultivate a habit of reading in your leisure hours, so that it may become not a duty only, but a source of the highest enjoyment. In old times the veterinarian

could advance only by personal observation, or the suggestions of such friends as were in his immediate neighbourhood. Now-a-days, the press brings the experience and discoveries of the whole scientific world within the reach of those who avail themselves of its aid. A man may, therefore, learn more in a month than he could of old have learned in a long life. Do not, however, allow the habit of reading to supersede that of practice and observation. He who knows his profession by books only, runs the risk of being a mere *dilettante* theorist. A theoretical veterinarian, like a theoretical lawyer, is a most dangerous member of the community. Science is as helpless without art, as art is without science. Though I should read up so as to pass a creditable examination, yet should I certainly fail if I attempted to perform the simplest operation which an ordinary farrier would execute with instinctive ease. Some of you may be defective in those preparatory acquirements, without which you will always find yourselves handicapped in your professional career. Among them may be mentioned a knowledge of Latin and French. There is no great difficulty in acquiring a knowledge of both sufficient for your purpose, provided only you devote an hour or two daily to their acquisition for a sufficient length of time. The difficulty is to make a beginning. But observe this, that the longer you delay, the more difficult will it become, until at last you will neither have the inclination nor the aptitude for such studies. Only get over the initial stages while yet young, and you will find that in your leisure hours afterwards you may insensibly push such studies to any extent you may desire. The same is true of mathematics and kindred sciences. In the initial stages only is the difficulty felt. Lay the foundation while yet young. The superstructure may afterwards be easily raised. Some of you are come from the country and are probably for the first time exposed to the temptations and the distractions of a large and populous city. That the dangers of these are great—very great—cannot be denied. It is painful to think how many young men of promise, from whose exertions science might have gained much, are thus annually lost, or form habits that eventually lead to ruin. As a guard against such disastrous results, I would counsel you to hold fast by those religious sentiments which you have received in your early homes. Such impressions are always the most valuable treasures we inherit. I would not inculcate asceticism, yet it is well to remember the apostolic precept, "Avoid the very appearance of evil." It is also well for youth rather to flee temptation than to trust to resisting it when exposed to its power. One important advice given by the ancients, and fully approved in modern times, is to make sure of a certain amount of physical exercise every day. Not only does this preserve *mens sana in corpore sano*, but it indirectly promotes regular living by sending a man early to bed. I do not mean that you should cultivate athletics, which often do more harm than good, but that by walking and the like you should take as much exercise in the open air as shall keep you in good condition for mental labour. It is well always to bear in mind that, as young men of the present day, you are in reality the heirs of all the ages that have preceded you. All that science has with untold efforts and struggles secured now lies before you to acquire, by simply making it your own. By the accumulated efforts of those who have gone before you, you stand on a vantage ground such as the greatest scientists of the past never possessed. The wealth of a Roman emperor could not have procured for him that scientific teaching that is now spread before you. For this rich inheritance that is bequeathed you from them into whose labours you enter, some return is due by you to the future. And that return can only be made by strenuous exertions on your part to add still more to the stores of learning that will fall to those who come after you. Every school of learning depends for its celebrity not only on the abilities of its teaching staff, but on

the application, the loyalty, and the enthusiasm of its students. The youth of this country, particularly of Scotland, have always been characterised by a desire for learning even under the greatest difficulties. Each one of you would, I doubt not, desire that this institution should flourish. Now, one of the most effectual means to that end consists in the diligence with which you prosecute your studies. And remember, that in thus promoting the welfare of this college, you are really promoting your own.

Professor YOUNG thought the Principal and students were greatly to be congratulated on the choice of the person by whom the session was inaugurated, for seldom has an institution of the kind been opened by an address so valuable in itself, so useful, so well worthy of being borne in mind by those to whom it was addressed, and also by the entire profession of which they desired to become members. The admirably succinct views afforded of the history of the profession made the address a historical document of some value, seeing that it showed what seemed to be too much forgotten at the present day, namely, that the veterinary art had fallen from the high position it had once occupied, by a mere accident, and had not been restored to its due position because of the unworthy jealousy and suspicion with which it had been regarded by members of the profession to which he himself belonged. It was to such institutions as the Glasgow Veterinary College they must look in the future for the restoration of both human medicine and veterinary medicine to their proper place—the restoration of the due proportions which were to exist between them; and he thought Sheriff Clark had foreshadowed very well what was the ardent desire of all who had the slightest interest in the progress of medicine in its most comprehensive sense when he suggested that human medicine and veterinary medicine should ere long form one indissoluble whole. (Applause.) He himself had long looked forward to a combination of the two kinds of medicine as a necessity that must come if pathology was to be put on its proper footing. He asked them simply to bear in mind this important point, the necessity for the careful study of comparative pathology; for those of them who happened to have read the discussions upon some of the legislation recently proposed before Parliament would doubtless have come to be aware of the fact that but for the labours of the veterinary surgeon they should still be in the dark as regards the character of some of the diseases which played such terrible havoc in the human race. (Applause.) As regards the sound advice tendered by the Sheriff, he would say nothing; but he should like to make an addition to what the Sheriff had said in speaking of what might, perhaps, come before the students as the ruling ideas of their studies regarding the development of the horse and other domestic animals. They would doubtless hear a good deal about evolution, and Sheriff Clark would pardon him if he reminded him that they were long past the days of natural selection; that evolution, as it was called—a title claimed by one particular class of observers, he thought, somewhat unfairfy, and to the prejudice of others who were equally entitled to claim it—had now added codicil after codicil to the right theory of natural selection, until they had a vast multiplicity of possible causes, each new explanation being needed to meet the case of some new difficulty. It was therefore superfluous in him to add anything regarding the danger of trusting to any one theory; but, if necessary to insist upon it, he should put it upon this ground—that there were so many additions needed, sometimes scarcely reconcilable with each other, it was best for them to confine their labours in the meantime to actual observation, trusting to the future calmer thought and wider experience before any one particular doctrine of evolution should be adopted. (Applause.) He moved a cordial vote of thanks to the Sheriff for his discourse.

Dr. JOHNSTONE seconded the motion, which was warmly responded to.

THE NEW VETERINARY COLLEGE.

THE New Veterinary College, Gayfield Square, was opened on October 20th, by an address by Principal Williams. Captain Mitchell occupied the chair. Principal Williams advised those entering the college to cherish a feeling of deep responsibility for their professional career. He said that they had great influence in war, as the efficiency of cavalry and artillery depended upon the condition of the horses. Of the importance of this subject the war in South Africa had given striking examples; and he pointed out that this had not received a fitting recompense; only one reward, and that a good service pension of £50, had been bestowed. In the course of a short history of the veterinary science, he stated that there were at present three schools in Scotland and one in England. Without entering into a discussion as to what preliminary education was necessary for a student, he yet strongly recommended them to study French and German. The profession, he considered, had now reached that stage when it could apply for a penal clause in order to prevent those who had no diploma passing themselves off on the public. Contagious diseases were on the decrease in this country, and the Contagious Diseases Act of 1878 had been to a great degree successful. The county of Edinburgh might be stated to be free of Pleuro, whilst Foot-and-mouth Disease had for a long time disappeared. After some reference to the arrangements recently effected between the Highland Society and the veterinary profession, Professor Williams alluded to the harmony and good feeling which prevailed during his year of office as President of the Royal College of Veterinary Surgeons. That harmony he attributed in a great measure to the fact of his having avoided the introduction of anything likely to cause discord, but he regretted to find that no sooner had his year of office expired, than innovations were being introduced which, if persisted in, would go far to destroy the unity of the profession so recently obtained, though long desired.*

With reference to matters of interest to the public, the lecturer proceeded to say, it was not my intention to refer to the American cattle question, upon which, as some of you are aware, I differed in opinion with the veterinary advisers of the Privy Council in 1879; but in the last Blue-Book, issued on August 31st, 1880, my name is brought forward in connection with the researches of Mr. Lyman, an old student of this college, who was sent over by the United States Government during this summer. It appears from this Blue-Book that the Agricultural Department at Washington received a letter from Mr. Lyman, dated the last week in July, in which he asserted that he had examined infected American cattle arriving in Liverpool since he came; that he finds many infected with what is known here and in England as Pleuro-pneumonia (although, he adds, Professor Williams, of Edinburgh, does not consider it Pleuro-pneumonia); that the disease was in most cases fresh; that the lungs were but slightly affected; and that three-fourths of the cases were Western cattle exported from Boston. You will notice that this letter of Mr. Lyman is said to have been sent in the last week in July. Now I never saw any of the lungs reported on by Mr. Lyman until the 20th of

* We are not aware that the harmony and good feeling which is stated to have existed during the Presidential year 1879-80 has been, or is likely to be disturbed, by anything that may be done during the present year. Most important reforms and improvements will certainly have been introduced before it expires, and which will, it is to be hoped, greatly benefit all whom they may concern—the whole body of the profession and the entire community, human and animal. There never was a time, perhaps, when the profession was more united, or more determined to carry out these so-called "innovations." Students, if they are compelled to listen to such abstruse introductory lectures, should at least not be misled or injuriously prejudiced by them.

August, a few days before Mr. Lyman sailed for America. How it can be stated that I considered the disease was not Pleuro, when I never saw it, is beyond my comprehension. It is, however, right that the public should know the merits of the case.

Seeing, then, that my name has again been brought up in this matter, I take the opportunity of repeating that the American disease which I had the opportunity of studying in 1879, was not Pleuro-pneumonia but Bronchitis, and that it was of a non-contagious nature, brought on by the vicissitudes of travel.

I do not for a moment deny that Pleuro exists in the United States ; nor would I wish to see the restrictions upon the importation of States cattle into this country removed, so long as the Government of that country do not enforce a sufficient security against the spread of disease, or so long as there is no legal line of demarcation which would prevent the movement of animals from the Eastern to the Western States.

Mr. Lyman, I am told, examined the lungs of over 10,000 American cattle slaughtered at Birkenhead, and found that in most cases of those diseased the lungs were but slightly affected. Now, if the disease were Pleuro, every man who has had experience of it will agree with me that, amongst so many animals, some at least would be found with their lungs in an advanced state of disease, although the cattle of themselves appeared in perfect health ; for it is a well-known fact that many animals regain the best of health after having suffered from Pleuro, become fat, and when slaughtered, perhaps months afterwards, present lesions of an unmistakable nature. I have seen scores of such, and I have no doubt that every practical man who has opportunities will agree with me.

One writer who had the opportunity of seeing the same lungs as myself at Liverpool, but differs with me in opinion, states, "Granted that the necroscopical appearances were not exactly identical with those we are accustomed to see in dairy cows, or, in fact, in any class of cattle where the disease runs a rapid course, the departures from the ordinary characteristics were not so great as to leave even the slightest doubt in the mind of the author as to the true nature of the disease, and these departures were no more than are produced by local circumstances—as breed, sex, and age of animals ; mode of feeding, condition, strength of constitution, intensity of the disease, rapidity of its progress, and the primary localisation of its origin, *i.e.*, whether in the bronchial membrane, the pulmonary structure, or the pleura."

Now Pleuro-pneumonia is a specific disease, and presents specific lesions, as specific and distinct as the Small-pox pustule. It is very true that an ordinary lung inflammation in cattle leads to a condition very similar to that seen in Pleuro, and it is an easy matter to confound one with the other ; but when we have thousands of lungs examined, and none of the diseased ones present signs of the disease except in its fresh state, I think we are at liberty to conclude that the matter at least requires a thorough reinvestigation.

I have, in the next place, to draw your attention to what is just now agitating the public mind, namely, the Texas or Splenic Fever, which is said to have been discovered at Birkenhead in American cattle.

This, according to the description and history, is a most remarkable disease, and differs from all other known maladies in being communicated by apparently healthy Texan cattle to cattle of other breeds with which they may come in contact, or which may feed on pastures contaminated with the excreta of the Texan beasts. "Animals which are thus affected," says Professor Brown in his last report, "suffer and die at the rate of 90 per cent. ; but they are not capable of infecting other cattle,"—in other words, Texan cattle in the most robust state of health communicate a disease which proves

fatal to 90 per cent. of other than Texan cattle; but here the matter ends, for these diseased cattle are incapable of further propagating the malady, or, according to Professor Brown, "The poison is rendered harmless by entering the system of any but a Texan beast, or probably it may be more correct to say that only Texan cattle have the power of excreting the poison of the disease."

The above opinion is founded upon a report by Professor Gamgee, who studied the disease in 1868; but there are some remarkable facts brought out in evidence, one of which I will venture to bring before you. Two hundred and eleven Texan cattle were driven to a farm in the vicinity of Francesville, Indiana, arriving there on the 26th May, 1867, in fine condition. They were brought in immediate contact with the native cattle on the farm and allowed to mingle and intermingle in grazing for about six weeks, no disease making its appearance.

"About this time a Mr. Blair purchased another lot of 377 Texan cattle, which were immediately driven to his farm in this country. They were also from the frontier, and were in excellent condition. Like the others, they were placed upon old grazing ground, and native cattle were permitted to mingle with them and to graze upon the same ground with and after them. This herd was placed for quite a number of days in a large pasture which was reserved for milch cows. After they were removed therefrom the milch cows were immediately returned thereto, and have been grazing therein ever since, and no disease has made its appearance as yet" (September 23, 1868).

"On the 1st July this herd was moved on to a ground opposite to that on which the lot of 211, already mentioned, were grazing, a small brook, which becomes partly extinct in dry weather, only intervening. About two weeks after Mr. Blair's cattle had been placed on this ground, the weather became extremely hot, and the season being previously very dry, the water was speedily dried up in the creek, except where it stood in stagnant pools, from which the cattle had to drink it, and the grass became dry and parched, unfit for food. Cattle suffered greatly from the extreme heat, and received but little nutriment from the dried grass which they ate and the stagnant water which they drank. Their systems being thus depressed by these adverse causes were rich resorts for any disease, the germs of which were present.

"On the 27th July a number of native cattle sickened; some died suddenly, others lingered for six or eight days. From the day on which the disease first manifested itself, it appeared successively among all the cattle that were allowed at any time to wander and graze over the ground whereon Texan cattle were kept; and nothing could save the cattle after the fearful symptoms of the disease had made their appearance. The only positively safe remedy was soon found to be a preventive—namely, confining Texan cattle closely upon their grounds, not allowing them to be moved about from one place to another, and to carefully prevent all native cattle from coming into contact with them or the pastures upon which they grazed. This judicious course, together with several fine heavy rains, followed by a cooler atmosphere, better water and pasture, occurring about two weeks after the first appearance of the disease, had the happy effect of checking the prevalence of it. No new cases occurred, except upon the farms where it already existed. Even amid the cattle most severely affected a marked change for the better was immediately observed. Many of them began to recover slowly, and have finally reached a complete recovery."—(*Blue Book*, Aug. 31st, 1880.)

You will observe that in this outbreak three factors, in addition to the presence of Texan cattle, were in operation—namely, very hot weather, short supply of water, and that in a stagnant condition, and grass so parched as to be unfit for food. To most men conversant with cattle diseases these causes

would have appeared to be quite sufficient of themselves to induce a pestilence amongst stock; but neither the writer of the report nor the chief inspector of the Privy Council seem to attach any importance to them, although the disease seems to have discontinued when these causes were counteracted by heavy rains, cooler atmosphere, and more abundant pasture. No remedy was of avail whilst the three causes were in operation, but immediately upon their disappearance "the most severely afflicted" became convalescent and finally recovered.

Gentlemen, I am not in a position to contradict the conclusions of the chief veterinary adviser of the Privy Council, but to my mind there are great grounds to doubt their correctness; and seeing that our welfare very greatly depends upon a supply of cattle from America, where they can be reared and delivered in this country at a much cheaper rate than they can be bred, I think the whole question, not only as it applies to Pleuro, but also to Texan Fever, should be re-opened and thoroughly investigated.

It is very true, fat cattle are landed here and our beef supply thus materially increased; but this is not what is required. The farmer wants to be supplied with cattle ready for feeding, at a price that will leave him some profit—a want which cannot be supplied unless American store stock are allowed access to our inland markets. Two years ago homebred lean stock, bought in the autumn, cost as much, and in many cases more money than they sold for beef in the following spring, leaving nothing to the farmer but the manure. Can we wonder, then, at the extreme depression which has proved so disastrous to our agriculturists?

On the motion of Dr. DYCER, a vote of thanks was accorded to Principal Williams for his lecture; and a similar compliment having been awarded to the chairman, the proceedings terminated.

YORKSHIRE VETERINARY MEDICAL SOCIETY.

THE concluding quarterly meeting for the year was held at the Queen's Hotel, Leeds, on Wednesday, the 27th October, the President, Mr. W. G. Schofield, in the chair.

The Secretary proposed, and Mr. Walker seconded the election of Mr. W. C. Lawson, Leeds; carried unanimously. Mr. Deighton proposed, and Mr. Ferguson seconded the election of Mr. W. Snarry, York; carried unanimously. Messrs. B. Smith, Barnsley, and F. A. Kirk, Huddersfield, were nominated for membership. The President read a letter he had received from Mr. George Fleming, President of the College, kindly volunteering to read a paper before the members of this Society. After some discussion it was unanimously resolved to invite Mr. Fleming to the ensuing annual meeting and dinner.

The PRESIDENT gave the details of a case of constipation, with sub-acute inflammation of the intestines, in a horse, with the usual symptoms. The pulse rose to the extraordinary height of 130 per minute, and continued so for three days, the pain diminishing as the pulse ascended; the patient died on the fifth day, from exhaustion. In consequence of a misunderstanding, no *post-mortem* examination was made. In the discussion that followed, Messrs. Walker, Faulkner, Broughton, and the President took part.

In consequence of the unavoidable absence of Mr. T. Greaves, his paper on the advantages to be derived from the adoption of the "Penal and Apprenticeship Clauses" was read by Mr. E. Faulkner. As might be expected, the author's views upon these exceedingly important subjects were presented in an energetic, lucid, and highly practical manner.

Mr. NAYLOR said the preliminary education of the veterinary pupil was far behind the requirements of the present day; even boys of twelve years

of age in the Board schools were far in advance of the required veterinary standard. He was very decidedly of opinion that a scientific literary education was essentially necessary, if a student really intended to follow the profession of a veterinary surgeon; he was also of opinion that to admit a young man at the early age of twenty into the profession was really a very great mistake.

Mr. P. WALKER thought that a penal clause ought not to admit a non-member, unless he had practised for twenty-five years. He was of opinion that an apprenticeship of two or three years should be compulsory.

Mr. PRATT said a man could not possibly become a scientist without a knowledge of Latin and Greek, and therefore the required education of the veterinary pupil was of a very inferior standard.

Mr. BROUGHTON concurred generally with Mr. Greaves' views, and he strongly advocated an apprenticeship of three years' duration.

The PRESIDENT was of opinion that a high-class standard of education was undoubtedly required; also that practical tuition, apart from the schools, was of paramount importance, as the practical education at the schools was of necessity limited.

Mr. FAULKNER agreed with Mr. Naylor, that a scientific literary education, with sound practical tuition, were the essential requirements of the veterinary surgeon; but nevertheless he thought that the veterinary surgeon of the present day was far in advance, in general knowledge, of his predecessors.

Mr. NAYLOR proposed, and Mr. Anderton seconded a vote of thanks to Mr. Greaves for his very able discourse; also to Mr. Faulkner for his kindness. Mr Faulkner returned thanks.

The Treasurer presented the balance sheet, showing a balance in favour of the Society of £96 9s. 4d.

The election of officers for 1881 then took place, Mr. J. H. Ferguson, Leeds, being unanimously elected President; Messrs. W. G. Schofield, T. Greaves and J. M. Axe, Vice-Presidents; Mr. Broughton, Hon. Sec.; and Mr. Ferguson, Hon. Treasurer.

SCOTTISH METROPOLITAN VETERINARY MEDICAL ASSOCIATION.

A MEETING of the Scottish Metropolitan Veterinary Medical Association was held in Edinburgh, on the 1st September last, when some interesting cases, of which the following are the notes, were brought before the members.

The following three cases were introduced by Mr. Cunningham, M.R.C.V.S., Slateford.

1. *Deformed, or Mal-formed, Fore Legs in a Foal.*—The foal was of a Clydesdale dam and sire, free, as far as known, from any hereditary defect or mal-formation. It was allowed to live two hours, and was strong and perfectly healthy, except in respect of the following deformity. The near fore leg was flexed at the fetlock, and turned inwards; the off limb was flexed at the knee. The principal metacarpal bone, with its phalanges, in each limb, was imperfectly developed, while in each the internal small metacarpal carried a still less perfect digit. The hind limbs were normal, and birth had been comparatively easy, one of the limbs only requiring to be put straight a little.

The case is one of great interest, as showing a tendency towards the typical complete development of parts, of which the normal structure of the horse's *manus* may be regarded as an arrested stage.

2. *Diseased Eye, the Result, probably, of Specific Ophthalmia.*—The crystalline lens was opaque. The vitreous humour was organised and consolidated, being of a fibrous structure, and enclosing a small piece of bone in its centre.

The cornea, aqueous humour, and iris were fairly healthy, but the whole eye seemed as if it had many years previously been the seat of severe specific Ophthalmia, the deeper structures having been most involved. The notable feature of the case was the partial conversion of the vitreous humour into bone.

3. *Fracture of the Os Suffraginis (Horse).*—A van horse took fright at a railway train, gave a violent plunge, and then stood still, with the near fore foot held up. *Post-mortem* examination showed a remarkable fracture of the os suffraginis. The inner half of the bone was almost intact, while the outer half was shattered into at least a dozen fragments, owing, probably, to a doubling outward of the fetlock at the moment of impact.

The notes of the following case of tumour on the brain were read by Mr. C. Rutherford, M.R.C.V.S., 21st Hussars, Piershill Barracks :—

On the evening of 19th June last, a bay mare, twelve years old, of seven years' service, was admitted to the sick lines, showing the following symptoms: Unsteady movements of all four legs, occasionally stretching her fore legs, and at same time reining back, she would stand with nose poked out, staring at the wall in front of her. Pulse was full, forty per minute; respirations normal. Immediately bled her and gave a dose of physic. Kept wet cloths at her head, and put her in a loose box without any food. Up till the morning of the 21st there was no alteration for the better, excepting that the bowels had at last responded to the physic; but in the evening I found her knocking herself about madly; eyes staring and glazed, pupils widely dilated, and trembling violently when touched. At times she stood quietly, pressing her nose against a corner of the box; pulse, when quiet, was 100 per minute, full and firm; mucous membranes injected, respirations accelerated—symptoms which lasted with more or less remission till the early morning of the 23rd, when she perambulated her box almost constantly, moving always to the left; and very unsteadily; unconscious of knocking her head against the walls; pulse had fallen to 86 per minute, fæces firm. A strong cantharidine blister applied (on the 22nd) to the poll and around base of the ears produced scarcely any result, and mustard to the abdomen, without effect. I kept cold water applied to the head, and wet swabs on the feet, removed the urine, and gave enemata. On the morning of the 23rd she fell on the near side and could not rise from it; insensible to the prick of a pin on the body and legs, but not on the face; unconscious paroxysmal movements of the limbs occurring frequently; fæces soft.

On the 25th she could stand quietly, though rather unsteadily, and often for an hour at a time, with her head outside the box, the neck pressed firmly against the lower half of the door, a most pitiful object, with eyelids closed from œdema, the near one discharging sanguineous pus, and with large sores here and there on the body. Subsequently she gradually improved, having more command over her movements; ate fairly well, partaking of hay, gruel, bran, and oats, walking exercise twice daily being allowed.

On July 5th she again appeared stupid, boring her head in a corner, off feed, and moving about much more unsteadily than before—symptoms which lasted nearly a week. I again applied a blister to the poll and around the ears, this time producing vesication. On the 12th inst. she was furiously delirious, reeling and dashing about unconsciously; insensible to outward impressions; the eyes glazed and staring, pupils dilated; the muscles of the neck spasmodically contracted; pulse small, rapid, and about 130 per minute; respirations irregular; mucous membranes intensely injected.[1] Next day she fell, and could not rise with help, nor could she have stood had she been able to get up. All that could be done to keep her quiet when so unmanageable, was to apply Ext. Belladonna and Tinct. Aconiti to the tongue, dash cold water on the head, and keep the bedding about her. Destroyed by pithing. Medicinally, during the disease, I gave repeated small doses of

Tinct. Aconiti, Tart. Emet., and Nitr. Potass, with the addition of calomel, or aloes, or Magnes. Sulph., as was thought best.

Post-mortem examination revealed: Hydrocephalus of ventricles and base of brain. The dura mater around the medulla (where it is normally pretty thick) was much thickened, soft, and pale yellow in colour. A tumour, racemose in appearance, and of a pale red colour, was found attached firmly to the pia mater, stretching across the posterior face of cerebellum, in that space between the cerebellum and medulla posteriorly, and separated from the fourth ventricle by the valve of Renault. Detached and placed in water, it branched out like seaweed. On closer examination one could readily detect three firm glistening portions, small and closely resembling tendon, not grating on section. Their composition I am not exactly aware of.

JOHN MCFADYEAN, *Sec.*

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this society was held in the Veterinary College, Glasgow, on Wednesday, October 20th. The President, Professor McCall, in the chair. Present, the following members :—Messrs. Robinson, W. and W., and McFarlane, Greenock ; Mr. Rutherford, Edinburgh ; Messrs. Dunlop and Kidney, Belfast ; Mr. Campbell, Kirkcudbright ; Mr. McIntosh, Dumfries ; Messrs. Spreull and Crockatt, Dundee ; Mr. Thomson, Inverness ; Mr. Lindsay, Alloa ; Messrs. Potties, McGeoch, and Houston, Paisley ; Mr. Chivas, Corbridge-on-Tyne ; Mr. Gardener, Helensburgh ; Mr. Neil, Dumbarton ; Mr. Blackie, Bellshill ; Mr. Brackenridge, Holytown ; Mr. Pollock, Hamilton ; Mr. Jarvie, Carluke ; Mr. Bryce, Stirling ; Mr. Clark, Dulserf ; Mr. Allan, Clarkston ; Mr. Blue, Mearns ; Mr. Panton, Blairgowrie; Mr. Constable, Inchture ; Messrs. Mitchell, Weir, Anderson, junr., J. B. McQueen, Prentice, Mitchell, Dickson, Hill, Pollock, Currie, and Messrs. Wyper, Glasgow ; Mr. Weir, Airdrie.

After some formal business, Mr. R. Rutherford, Edinburgh, read an interesting and exhaustive essay upon "Inoculation for Contagious Pleuro-pneumonia." It was agreed to reserve the discussion of the paper till next quarterly meeting.

The members and friends afterwards dined together in the Royal Restaurant, West Nile Street, where a most enjoyable evening was spent.

J. MACQUEEN, *Secretary.*

MONTREAL VETERINARY MEDICAL ASSOCIATION.

THIS Association held its opening meeting for the winter session 1880-81 in the lecture-room of the Veterinary College, Union Avenue, on October 14th. The President, Dr. Osler, in the chair. The President opened with an address to the members before retiring from office. The meeting then proceeded to the election of officers for the ensuing session, with the following result :—President, C. J. Alloway, V.S. ; 1st Vice-President, James Bell, M.D. ; 2nd Vice-President, M. C. Baker, V.S. ; Secretary-Treasurer, E. J. Carter ; Librarian, B. D. Pierce.

Mr. Alloway then took the chair, and addressed the meeting ; followed by Professor McEachran, Honorary President, who expressed his satisfaction upon the prosperous condition of the Association and the library connected with it, which is now one of the most valuable on this continent, containing all the oldest and the most recent works on veterinary and collateral sciences. He also pointed out the benefits to be derived by the members of the Association from their meeting together for the purpose of hearing papers read and discussed.

The following gentlemen were proposed as members of the Association :—A. W. Clement, Geo. W. Goetz, T. J. O'Connol, Alfred W. Mears, James Brodie, J. A. Duncan, P. Paquin, F. Paquin, P. A. Pomroy, L. W. Bergeron, C. B. Robinson, P. Gadbois, V. T. Daubigny, V.S., R. T. Whittlesey, and William Lemay.

A vote of thanks was passed to the retiring officers.

At the next meeting, Prof. McEachran was to read a paper on the important subject of "Tuberculosis of Cattle, and its Relation to Public Health." A communication was also to be read on "Purpura Hæmorrhagica," by Mr. Charles H. Ormond.

WILTS AND HANTS AGRICULTURAL COLLEGE.

AT the opening of the new Physiological Laboratory at the Wilts and Hants Agricultural College, Downton, Salisbury, on Wednesday, the 10th ult., the inaugural lecture was delivered by Professor W. Fream, B.Sc., Lond., F.G.S., who chose for his subject, "The Relations of the Science of Biology to the Art of Agriculture."

The Professor said :—Biology, if not a science of modern origin, is at least a science of modern cultivation. As long ago as the time of Aristotle the methods of biology were understood, but for centuries of darkness afterwards the subject was allowed to slumber till, within the memory of living man, it became revivified at the expense of the vague and somewhat ill-defined subject termed Natural History. The work of the natural historian was almost exclusively that of observation ; it sufficed to describe the external characters of living things, and it was not thought necessary to penetrate far beneath the surface. And thus it was that the botanist and the zoologist pursued their studies each independent of the other, and neither suspected the existence of the strong bond of affinity which united their subjects together and made them practically one. The impetus given by Linnæus to the study of living things, comparable to the revival by the efforts of Kepler, Copernicus, Galileo, and Newton of another domain of science, was marked by the appearance of many students, who diligently investigated the external features of plants and animals, and placed their observations on record. To the fact that animals exhibit a more highly differentiated structure, and a greater specialisation of parts than plants, must be attributed the circumstance that zoologists began earlier than botanists to inquire into the details of internal structure, and in the labours of Baron Cuvier and Geoffroy Saint-Hilaire thus laid the foundations of the grand study of comparative anatomy. At the same time speculative minds were not idle, and at the end of the last century Lamarck in France, and later on Goethe in Germany, were on the threshold of the discovery of great truths which it was left for Darwin subsequently to enunciate. But it was by the investigation of the concrete rather than by the study of the abstract that the initial advances were made. So long ago as 1667, Robert Hooke discovered that cork possessed a cellular structure, and four years afterwards Malpighi, in his *Anatome Plantarum*, showed that plants are composed of separable "vesicles." Almost a century later, in 1759, Caspar Friedrich Wolff, in his *Theoria Generationis*, maintained the essential unity of organisation in animal and vegetable structures, and after the lapse of nearly another century we find Matthias Schleiden, in 1838, describing the cell in plants as the true unit of structure, from the continued multiplication of which the entire organism was built up. Theodore Schwann at once extended this theory to all living things, whether plant or animal, and from this re-assertion of the unity of organisation throughout animated nature modern Biology takes its start. Hugo von Mohl had previously, in 1835, given an account of the process of cell-division, but it was not till

eleven years afterwards that he described protoplasm, a soft, granular semi-fluid substance inseparably connected with all living things. Zoologists had already given the name of sarcode to a substance which appeared to possess the same relation to animal life as protoplasm to plant life, and Ferdinand Cohn, in 1850, broke down the last barrier between plants and animals when he suggested the identity of the protoplasm of the botanist with the sarcode of the zoologist. The term sarcode has since fallen into abeyance, and protoplasm is now regarded as the physical basis of life, all forms of life, whether animal or vegetable, being modifications in different directions of the living and life-giving protoplasm. Herein lies the bond of union between zoology and botany, a link of affinity which is every day growing stronger, and which has done more than anything else to lead to an approximation of the methods adopted both in the anatomical study and in the physiological investigation of all living things. But it would be erroneous to suppose that protoplasm itself is an animal, or that it is a plant, or that it can be included amongst those living things of doubtful affinity, neither plant nor animal, which have been assigned to the "No man's land" of Haeckel's Protista. Protoplasm, so far as we know, is none of these things, it is simply living matter possessed of a spontaneous automatic power of motion, capable of assuming different forms, and of changing both its shape and its internal state; its composition is continually varying, and the chemical and molecular forces in it are never in equilibrium. As silent in its operations as it is ceaseless in its activity, this mysterious substance has the power of building up every living thing, and as all plants and animals thus result from the vital energy of protoplasm, zoologists and botanists alike find in it not only a subject of transcendent interest, but one which is an irrefutable proof of the essential oneness of the objects of their study. And this community of interest is increased by the failure of every attempt that has ever been made to construct a definition of plants which shall exclude all animals, or a definition of animals which shall exclude all plants, the fact being that there exists a number of living things which belong as much to the one class as to the other. The old Linnæan expression of "animals, vegetables, and minerals," has therefore, of necessity, given place to that of "living things and non-living things."

The first course of biological instruction in this country was given about eight years ago, under the direction of Professor Huxley; since that time the subject has rapidly developed, and is gradually replacing the old methods of teaching botany and zoology. All living things are capable of complete study under two heads, morphology and physiology. Morphology investigates external form and internal structure, and also the modes of growth and development, these latter really furnishing the key to the former. Physiology inquires into the functions of living things and of their several parts, and into all the physical conditions affecting, or attendant on, life and growth. These two branches of biology are obviously interdependent, and in the correlation of structure with function, they glide imperceptibly into each other.

Perhaps the most important characteristic of modern biology, and the one which specially commends the subject to our notice, is that it requires the student himself to make the investigations on which his knowledge is to be based, instead of simply "reading up" the subject in a book, and forming thereby an invariably imperfect and not infrequently erroneous notion of what he wishes to know. Let us here consider for a moment the case of our live stock, by far the most important element in British farming. We pride ourselves on our horses and cattle and farm animals in general, and our eyes linger lovingly on long pedigrees in our herd and stud books. We see a noble animal before us, and take in all the details of its handsome form, and

learn to look out for those "points" on which its value must be determined, and yet we cannot but confess to ourselves that our knowledge is only skin-deep, and that of the actual structure of the animal, and of the functions of its various parts, and of those processes by which it lives and grows, we are strangely ignorant. Is it not anomalous that those who are engaged year after year in one of the most important and lasting industries of this country, that of rearing stock, should be acquainted only with the superficial parts of the animals they breed? At least, it seems so to me, and part of our work here will be to obtain such an insight into the anatomy and physiology of our farm animals as will teach us what they should be in health, and how best to preserve them from disease. For this purpose each of you will be required to take the scalpel and to make as thorough and systematic a dissection as possible of one of the commonest of our domestic animals, to make sketches of your dissection at every important stage, to acquaint yourselves with the structure and functions of the various parts as they are exposed to view, and to inquire into their relations with other parts. Besides this, the skeleton must be carefully studied; the name, shape, and position of every bone should be known, as well as its relations to the adjacent soft parts, and I specially commend this fascinating branch of the subject to your notice, for it is a matter of common repute that a student who "knows his bones" well will experience but little difficulty with the other anatomical details. Having thus obtained a good practical knowledge of the anatomy of one animal, we shall use it as a standard of comparison by means of which we may acquire an equally sound knowledge of that of others, and in this way we hope to become thoroughly familiar with the horse, ox, sheep, pig, and dog, and so to lay a sure foundation on which may be based the treatment of these animals in health and disease. While to us, as agriculturists, the mammals are by far the most important group of animals, there are others whose significance we cannot overlook, and with whom it is desirable to form a closer acquaintance than we at present possess. There can be no doubt that various birds, molluscs, and annelids take an active part in the dissemination of certain classes of disease amongst our live stock, by acting as "hosts" to the parasites which invariably accompany these diseases, and therefore a practically acquired knowledge of the leading features in the anatomy of a bird, of a snail, of an earthworm, and of such a parasite as the fluke, appears to be most desirable. Another great class of animals to the ravages of which whole crops frequently fall victims is the group of insects; so by patiently working out the details of structure and development of a well-selected insect as a type, we shall, by comparison, be able to obtain such a knowledge of wireworms, turnip flies, horse-bots, and other pests, as cannot but form a weighty factor in the consideration of all attempts to effect their extermination.

And if we hope to reap advantage from the study of animal life in this way, we may rest assured that the similar study of vegetable forms will prove not less valuable. For this purpose we shall take one of the commonest of our cultivated plants, and carefully work out all the details of its life-history from the germination of the seed to the ripening of the fruit. By the aid of appropriate instruments, and by the use of the microscope and of chemical reagents, we shall thus obtain such an insight into the nature of plant-life, and into the course of development, as can be acquired in no other way, and then, having this plant in our mind, we can rapidly acquire similar knowledge respecting other plants which are of interest to us. Each student having thus worked out for himself the details of structure and development of two or three typical plants will have become possessed of a ground-work on which to build up, in the shortest possible time, a knowledge of systematic botany such as, I think, every agriculturist should possess. A knowledge

of the seeds of our farm plants and of the weed-seeds which they may contain, an acquaintance with the grasses and clovers indigenous to this country, and a capability of determining by means of a "Flora" the name of any native plant that may by chance come under his notice, all seem to me indispensable to a well-educated agriculturist. All farmers, I suppose, know ryegrass, and yet I doubt whether one in twenty knows the names of even half-a-dozen of the grasses he cultivates, and fewer still are capable of discriminating between good species and bad, but with the increase of grazing lands in this country, and with the competition of the world ever growing keener, this is a subject which will undoubtedly become of the first commercial importance.

One group of vegetal organisms which will demand the exercise of our fullest powers of experiment and observation, are the fungal plants, for these exert quite as devastating an influence on our crops, and even on our animals, as do the insect pests. The means which have from time to time been suggested for combating the parasitic fungi are as many and varied as the parasites themselves, and the most approved methods now seem to involve a determination of the cycle of changes which make up the life-history of the fungus, so that it may be attacked in the weakest of these. It appears to me that fungal diseases of plants are on the increase, and that as we assign more and more rigid limits to the natural conditions under which our crops are grown, and resort more extensively to the use of artificial fertilisers, so new diseases of this class may be expected to originate. The potato disease and the coffee-plant disease are both of very recent origin, and we have no right to assume that with the appearance of these the generation of new diseases has come to an end.

Close as are the relations of biology with veterinary practice on the one hand, and with the art of agriculture on the other, not less marked is its connection with another science most important to the agriculturist, namely, chemistry, for in the study of the functions of living things—that is, of physiology—some acquaintance with chemical science is absolutely indispensable. It is in the exercise of their functions that plants and animals exhibit those phenomena to which, in their totality, we give the name of life, and as the sole object of agricultural practice is to produce living things, to rear animals, and to cultivate plants, it is needless for me to point out how necessary it is that we should understand aright the vital processes which take place both in plants and in animals. And as every vital process involves some corresponding chemical change, this alone will account for the fact that every physiologist is also a chemist. Here again, as in the study of morphology, we shall find it necessary to resort to experiment and observation, and each of you will have the opportunity of acquiring for himself a practical knowledge of the leading physiological facts. The influence of varying conditions of temperature, moisture, and light on the germination of seeds, and the chemical changes attendant thereon, the mode in which the young seedling commences its independent existence, the way in which the plant selects its food from the soil and from the atmosphere, the varying chemical composition of different parts of the plan at different times, the changes accompanying the formation of the fruit and the ripening of the seed, the phenomenon of parasitism, and the nature of the connection between the parasite and its host, the processes of growth, and the manner in which starch, sugar, proteids, and other reserve materials are manufactured by the protoplasm and stored up in special members of the plant-body, the production and properties of chlorophyll and of other colouring matters, these and such subjects will profitably occupy our time in the study of vegetable physiology. And, on the other hand, the functions of the heart, lungs, kidneys, stomach, liver, and other organs of the animal body, the organic and chemical constitution of blood, the composition and mode of production of milk and other

animal fluids, the production and regulation of animal heat, the quantities and kinds of food necessary to balance the losses of the animal body, and the processes which such food undergoes during digestion, these and kindred subjects in animal physiology are those a knowledge of which will be of direct practical value to us. The variation of animals and plants under domestication, the results of cross fertilisation, and the production of new varieties, the whole theory and practice of breeding, these again are subjects as purely physiological as they are agricultural, and as such will come under our notice. To know what our crops and live stock should be in a state of health, and to learn how to preserve them in that condition, is what physiology teaches ; to know how to treat them when subject to injury or disease is what pathology teaches, and a rational knowledge of the latter is only to be arrived at through an acquaintance with the former.

Forty years ago the intimate relationship which now exists between chemistry and agriculture was hardly thought of, and the powerful influence which chemical science was hereafter to exert on agricultural practice was equally unsuspected. So is it to-day with the science of biology. But, concerning itself as it does with animals and plants the production of which is, after all, the sole end of agricultural art, it has claims on our consideration which cannot longer be ignored, and which will, in the near future, as it seems to me, obtain for biology a recognition of the importance of its relation to agriculture as hardly inferior to that of chemistry.

I am aware that in introducing this subject to your notice I am breaking fresh ground in agricultural education, but I do not think this invasion of new territory is taking place a moment too soon. We belong to a young institution, and though we may to a great extent be influenced by the experience of the past, it is also necessary to be guided by what is going on around us, and by what appears expedient for the future. And thus it has seemed fit to include in the curriculum of this college the study of practical biology, and that is the reason that, side by side, and in fitting companionship with our chemical laboratory, there has been erected a physiological laboratory, into the possession of which we are about to enter, and wherein every facility will be afforded you for acquiring a sounder knowledge of the animals we rear, and of the plants we cultivate, than has ever before been at the command of agricultural students in this country. But let it not be thought that here, in the district of Gilbert White, of Selborne, I would wish to dethrone the time-honoured subject of natural history, in the outdoor pursuit of which you all take such a healthy interest. Rather would I urge you in the illumination of the brighter light of biological knowledge to follow up your field studies with even greater zest than before. It may be that the work on which you are now about to enter is cast in a somewhat sterner mould than the old natural history, but the ingots will be the more valuable ; much patience, resolution, and skill will be required, but you will have the satisfaction of knowing that you are learning, not through the medium of any book written by the hand of man, but that you are receiving your lesson direct from the inimitable works of Nature herself. If you bring to your work a firm hand, a penetrating eye, and a faithful pencil, these, with the earnestness of purpose of which you have already given indications, will lead you along the shortest road to priceless knowledge which will bear directly and practically on your future avocations. And, in the full belief that this will be so, I now bid you welcome to our Physiological Laboratory, where I trust we shall spend together many instructive and profitable hours, on which, in the years to come, you will look back with feelings of pleasure and satisfaction.

Army Veterinary Department.

Gazette, November 9th.

VETERINARY DEPARTMENT.—Inspecting Veterinary Surgeon J. Tatam is placed on temporary half-pay; Veterinary Surgeon J. E. Elphick, from half-pay, to be Veterinary Surgeon.

His Excellency the Commander-in-Chief in India has been pleased to sanction that Veterinary Surgeon (First Class) R. Poyser, "The Carabineers," recently returned from service in Afghanistan, shall be appointed to perform the administrative duties of the Inspecting Veterinary Surgeon's office, 2nd Circle, at Simla, during the absence of Dr. Griffith Evans, I.V.S., on special duty in the Indus Valley and Punjab frontier.

Obituary.

THE death is reported of Mr. E. A. E. Ashe, M.R.C.V.S., Cork, on November 9th, from an accident while hunting with the Muskerry foxhounds. The melancholy event has caused much regret in Cork, where Mr. Ashe and his father were held in high esteem as veterinary surgeons. Great sympathy is also manifested towards his wife, who happened to be driving along the road when she met her husband's horse galloping along riderless. Mr. Ashe only graduated in 1874.

We are also informed of the death of Mr. G. Wentworth, M.R.C.V.S., Grimsby, who graduated in 1851. Likewise of Mr. H. W. Thomas, M.R.C.V.S., of Plymouth, a graduate of 1866.

Jurisprudence.

DURHAM MICHAELMAS SESSIONS.

Wednesday, 20th October, 1880.

CASE OF ALLEGED PLEURO-PNEUMONIA.

COWLEY AND WALKER *v.* GARRY AND THE COUNTY JUSTICES OF STOCKTON WARD.—This was an appeal against a conviction of the Stockton magistrates, the appellants being Robert Cowley, cattle dealer, of Darlington, and John Walker, cattle dealer, of Cockerton. Mr. Luck, instructed by Mr. Edward Wooler, for appellants, and Mr. Milvain, instructed by Mr. H. G. Faber, for respondents.—On the 8th of September last appellants were convicted by the Stockton magistrates for sending, or causing to be sent, a cow suffering from Pleuro-pneumonia from Darlington to Stockton by the North-Eastern Railway. They were each ordered to forfeit the sum of £15 4s. 3d., and pay the fine and £4 5s. 9d. costs, making a total of £20 each.

Mr. Luck, at the outset, took certain technical objections—first, that the conviction was a joint one, made against the appellants, and they ought to have been separate and distinct convictions; and second, that by the Summary Jurisdiction Act, 42 and 43 Vict., cap. 49, sec. 5, in default of payment of penalty, the amount of punishment should not exceed two months for the sum of £20, whereas in this conviction the magistrates had imposed a sentence of three months.

The court overruled the first objection, and amended the conviction as to the second. The case then proceeded on its merits, Mr. Milvain stating that he should prove that the cow was diseased on the morning of the 25th

of August, and he thought if he proved the animal to have been suffering from some disease or other, that would be sufficient to show the conviction was good.—The bench reminded Mr. Milvain that he must show the cow was suffering from "cattle disease," which the Act defined as being Rinderpest, Pleuro-pneumonia, Foot-and-Mouth Disease, Sheep-pox, or Sheep-scab. The real question the bench had to decide was whether this animal was suffering from one of these diseases or not.—The transmission of the animal by the appellants having been proved,

John Metcalfe Garry, inspector under the Contagious Diseases (Animals') Act to the Stockton Corporation, said he saw this cow in the Half-Moon Hotel yard, Stockton, on the 25th of August last; she was suffering very badly from Pleuro-pneumonia.

Mr. Hall, veterinary inspector to the Corporation of Stockton, said he had made an examination of the cow on the 25th of August last. He found the animal suffering from Pleuro-pneumonia of a very bad description. He had had a lifetime of experience of this disease, and remembered, when a boy, his father losing forty beasts from this disease. He believed the disease arose spontaneously, but its origin was an unsettled question at the present day. The temperature of the animal was 102 degrees. The normal temperature of a healthy cow was 98 or 100 degrees, but temperature was only one symptom of Pleuro-pneumonia out of a great number of others.

Mr. Thomas Batey, member of the Royal College of Veterinary Surgeons, and one of the veterinary inspectors of the Corporation of Stockton, had also examined the cow. He corroborated the evidence given by Mr. Hall. He made a *post-mortem*, and examined the lungs of the cow, and found both lungs much consolidated, and three-fourths of both lungs affected.

Mr. Luck: If as far back as January you had seen the animal continually coughing, its coat standing on its back, eating heartily, and giving short milk, would not that alter your opinion as to the animal suffering from Pleuro-pneumonia?—Witness: I don't see what you want to be at.—Mr. Luck: Would the cow have been suffering from Pleuro-pneumonia at that time?—Witness: Had the cow been suffering from Pleuro-pneumonia in January it would have been dead long ago.—The Chairman: But if the cow was suffering from these things in January, may not Pleuro-pneumonia have supervened?—Witness: Most certainly.—Mr. Luck: Did you not, Mr. Batey, make a mistake in the case of alleged Pleuro-pneumonia at Norton, near Stockton, and did not you and Mr. Plews condemn a cow for Pleuro-pneumonia, and were not the lungs afterwards sent to the London and Edinburgh colleges, and certificates given by the professors that the lungs were affected with parasites, and was not the case so reported in the *Veterinarian*?—Witness: I do not remember anything about it.

This was the case for the respondents, and Mr. Luck, in opening the case for the appellants, admitted if the witnesses could be relied upon for accuracy there would be an end of the case; but he would call witnesses who would say this cow could not have been suffering from Pleuro-pneumonia at all.—The Chairman asked Mr. Luck if it was his intention to call professional gentlemen who had had an opportunity of seeing the animal when it was alive, or who had seen it when it was dead.—Mr. Luck said unfortunately he could not, inasmuch as they had applied to the Privy Council to have the animal exhumed, but the application was refused.—He wished to call Mr. Stephenson, of Newcastle, and Mr. Peele, of Durham.—The Chairman: No one can have a higher opinion than I have of those two gentlemen, but it is clear they can only speak from what they have been told; and I do not think the bench will be justified in setting aside the evidence of witnesses who have made *post-mortem* examination of the cow, and who saw it when it was alive, on the evidence of gentlemen who have not

had that opportunity; but, however, you can call your witnesses if you wish to do so.—Mr. Luck: I certainly hope you will not decide the case without hearing my evidence.—The Chairman: Very well, by all means call your witnesses.

Leonard Burton, cattle dealer and farmer, living in Westmoreland, remembered buying the cow in question of a Mr. Beck, on the 14th of January last. He also remembered when he was driving her to Kirby Stephen Station, to truck her for Darlington market, she put out her tongue and coughed, and was suffering from cold.

William Howe, agent to Messrs. Tarn, auctioneers, Darlington, had had the cow in his possession, and she had a cough upon her in January last, and was suffering from Consumption.

John Snowden, farmer, Nag's Head, Darlington, bought the cow in February last, and kept her among his other cattle until the 24th of August. She used to cough and blow a bit. His cattle had been examined by Mr. Hedley, veterinary surgeon, on 12th of October, and they have been found to be in good health.

John Ambrose Bamlett, a farmer in an extensive way at Darlington, knew the cow. She was in a field adjoining one in which some of his cattle were. He saw she was an ailing cow, and he examined her to see if she was suffering from any contagious disease, with a view of making a complaint to the inspector, so that he might have the cow removed from close proximity to his own cattle. After making the examination he was convinced she was not suffering from any contagious disease, but from Consumption.

Mr. Matthew Hedley, veterinary surgeon, and inspector for the Borough of Darlington, Darlington Ward, Durham and Gilling Division, Yorkshire, spoke to having examined Mr. Snowden's cattle, and finding them all in good health. It was the opinion of the veterinary profession in this country that Pleuro-pneumonia did not rise spontaneously. He had generally found that an animal lived about four or five weeks after it become infected with the disease. From the evidence he had heard to-day he was quite satisfied the animal could not be suffering from Pleuro-pneumonia, but Tuberculosis.

Mr. Clement Stephenson, Fellow of the Royal College of Veterinary Surgeons, and practising at Newcastle-on-Tyne, said from the history he had heard of the animal, and from the evidence of the *post-mortem*, he was of opinion that the cow was suffering from Tuberculosis and not Pleuro-pneumonia. In forming that judgment he had been chiefly influenced by the witness who made the *post-mortem*. Mr. Batey said that both lungs were much consolidated, and three-fourths of each affected. He (Mr. Stephenson) had made hundreds and hundreds of *post-mortems*, and he had never known a single case of an animal suffering from Pleuro-pneumonia when both lungs had been affected. The rule was, in Pleuro-pneumonia cases, to find one lung, or a small portion of one lung, affected, and the remainder perfectly healthy. It was his experience that a great many cases of Tuberculosis—and many other diseases, such as Heart Disease and ordinary colds—had been mistaken for Pleuro-pneumonia. The symptoms of Pleuro-pneumonia and Tuberculosis were very analogous. But it was difficult to tell sometimes which disease it was, and this rendered a *post-mortem* examination necessary.

The Chairman: Can you speak with positive certainty as to a disease of this sort, without a *post-mortem* examination?

Mr. Stephenson: Yes, you can sometimes; sometimes it is quite plain, while at other times it is most difficult to distinguish Tuberculosis from Pleuro-pneumonia in the diagnosis of the living animal.

The Chairman: But would not a veterinary surgeon who had made a *post-mortem* examination of an animal, be more likely to judge of the true condition than a veterinary surgeon who had only seen it alive?

Mr. Stephenson: Certainly, it is the last test you can put to doubtful or suspicious cases—particularly in lung diseases.

Examination continued by Mr. Luck, witness said Pleuro-pneumonia was purely a contagious disease, and never arose spontaneously in England. Last year, as district inspector for Northumberland, he examined forty-eight cases of alleged Pleuro-pneumonia, and only three were found to be Pleuro-pneumonia. This statement was sent in his report last year to the Privy Council. It was the case generally throughout England.

In cross-examination, witness said he would rather draw his conclusion from what he saw himself than what he heard; and that a professional man, however experienced, might be mistaken in the conclusion he came to.

Mr. John Edward Peele, member of the Royal College of Veterinary Surgeons, Durham, was of opinion the cow was suffering from Tuberculosis, and not Pleuro-pneumonia. In the latter disease, during his experience he had found one lung only affected, and generally the right one. Mr. Batey, who made the *post-mortem* examination, had said that both lungs were affected. That was a case unprecedented in the annals of Pleuro-pneumonia.

This was the case for the respondents, and Mr. Luck reviewed the evidence that had been given, remarking that it was impossible for the bench to confirm the conviction in the face of the professional testimony he had adduced, and when they bore in mind the great number of mistakes that had been made as to the existence of Pleuro-pneumonia.

The bench, after a brief consultation, dismissed the appeal with costs, and thus upheld the conviction.

Mr. Luck asked the bench to grant him a case for the Queen's Bench, on the technical objections he had taken.—A case was granted as to whether the court had power to make the amendment in the conviction from three to two months' imprisonment.

Notes and News.

CHAFF FOR HORSES.—A writer in the *Trierer* (Trèves) *Landbote* points out that the length to which their chaff is cut exercises considerable influence upon the well-being of horses. In stables where it is chopped too small attacks of Colic are of unusual frequency as its direct effect. The chaff is not altogether to be regarded as food, but rather as a supplement to it, given with the view of inducing more complete mastication and insalivation of the oats or other grain, and it is obvious that it will answer this purpose better when not exceedingly short cut. About three quarters of an inch is perhaps the most advisable length.

MEMORY IN THE DOG.—Mr. Clayton, veterinary surgeon with the Royal Horse Artillery in Afghanistan, adds another to the many instances recorded of the wonderful way in which dogs find their way about in strange countries. A dog which had been his constant companion since it was a puppy, about four years previously, accompanied him into Afghanistan. On the departure of General Stewart's force from Candahar, Mr. Clayton being with it, the dog travelled as far as Ahmed Kheyl, where a battle was fought. The dog was seen at the commencement of the engagement, but in the evening it was missing. A sergeant told Mr. Clayton that he saw it lying cut up and dead on the field. A few days after, however, the dog turned up alive and well at Candahar, having found its way over 250 miles of inhospitable country by itself. It is supposed that it took fright and ran away during the action, as it was always very nervous when there was firing, especially rifle fire.

INFLUENZA ON THE AMERICAN CONTINENT.—We learn that what is designated in the United States the "Horse Epizoötic," and to which we referred last month, had shown itself in Chicago and Indianapolis. On October 7th it was estimated to have affected 5 per cent. of the horses in Philadelphia, six thousand in New York, and two thousand in Brooklyn and Jersey City. Nearly all the horses in Washington had been affected; in Maryland the agricultural horses had suffered; in Virginia it was very prevalent, and it was epidemic in nearly every town in New Jersey. With regard to this outbreak the *Toronto Weekly Globe* has the following remarks:—"The peculiar atmospheric condition supposed to have been the cause of the horse epizoötic, which in the fall of 1872 made this name of Toronto a bugbear all over the northern part of this continent, seems to be again prevailing on the Atlantic coast. This year, however, the disease is of a milder type than that which showed itself eight years ago. Fully two-thirds of the horses in Toronto have been down with this strange disease at one time. After reaching this city—for the disease is supposed to have originated a few miles back, and not in the city—the epizoötic spread all over the northern part of this continent—Buffalo, Montreal, Boston, New York, Philadelphia, Chicago, and everywhere else. So universal was the prostration of the horses that oxen and dogs reappeared as beasts of burden. It is worth while mentioning that the result of the experience gained during the former visitation was this:—Drugging the animals did no good. The best way to treat them was to give them linseed mashes, and the remainder of their food in the shape of boiled oats or barley with bran. The nostrils should be sponged with tepid water. When left to nature, the disease ran its course more quickly, and there was less to be feared in the way of after-consequences. It was only in severe cases that the veterinary surgeons found themselves useful."

FUNGUS SPORES.—A species of Phallus, a fungus which appears regularly in the same spot in successive years, producing an immense number of spores—millions on millions, probably—and which, from their dustlike nature, can be borne by the wind many miles; and yet it is believed the species is rarely found, for the oddity of its form would attract the attention of the most stolid observer, did it exist, to say nothing of the impression it would make on those matter-of-fact individuals who are accustomed to "follow their nose" in travelling through the world. This fact has been noticed by observers in connection with other fungoid plants. It seems to point to the generalisation that it requires a very nice combination of circumstances for the spore of a fungus to be safe in germinating; and hence Nature prepares an abundance of material, in a sort of ratio to the risk.

TEXAN BEEF.—There are beef-packing establishments at Rockport and Fulton, Texas, both of which places are in the centre of cattle ranges, in which at least 100,000 beeves are slaughtered every year. Every part of the beef is utilised, even the tufts of the tails, which are preserved and sold for the making of ladies' friezes. The blood flows into tanks, and is sold at two cents a pound for the making of fertilisers. The tongues and lean beef are boiled and canned. The hides are salted and sold again. The fatty matter is extracted and goes to tallow. The bones are boiled to a pulp, to extract this fatty matter, and the dry bones, mainly of phosphate of lime, are sold at one cent a pound for fertilising. The feet are cut off, and from the hoof neat's foot oil is extracted. The horny part of the foot, the shin bones and knuckle bones are sold for the manufacture of domestic ivory. The horns are piled up until the pith becomes loose, and this is added to the fertilisers, and the horns are sold for manufacture. Every atom of the animal is probably used.

VETERINARY SCIENCE IN JAPAN.—We learn that Herr Janson, District Veterinary Surgeon and Demonstrator at the Berlin Veterinary School, has been appointed Veterinary Adviser to the Japanese Government, as well as Principal of the Agricultural School at Tokio, with H. Troester, Military Veterinary Surgeon, as his assistant. They both started for Japan in August, and commenced their duties in November.

Correspondence, etc.

THE ARMY VETERINARY DEPARTMENT.

To the Editor of the VETERINARY JOURNAL.

SIR,—Under the heading of "Army Veterinary Department," in the September number of your Journal, you warn your young readers about the ten years system of service. I quite coincide with your remarks, and feel certain that some of the new army men would not have joined if you had published those remarks before. Why did you not do so? In England, the department suffers many slights and wrongs, but on active service the way it is treated is nothing less than scandalous; while the treatment we are subjected to in India is so remarkable, that I am convinced candidates cannot be aware of the agreement they enter upon. I am alluding particularly to the young men who join under the May Warrant of 1878. In order not to occupy too much space, I will confine myself to the question of pay, merely stating that we have nearly all the grievances of the older veterinary surgeons with a few special ones of our own.

An intending candidate, on referring to the Warrant for 1878, finds, amongst other things, that he will have £250 a year, and allowances; which, under favourable circumstances, such as living out of barracks, amount to about £145 more,—altogether about £395 a year. Now this is not a bad bait, and is now and then swallowed by unsuspecting youths. In about a year's time it gradually dawns on them, that although on paper they are to receive a fair amount of pay, it is not so in reality.

The new scale of pay only applies to England; for soon after the issue of the said Warrant, a quiet little G.G.O. (G.G.O. No. 912, dated 11th November, 1879) came out in India (with the sanction of the home Government), which put the new men on the same footing, as far as pay is concerned, with the old ones who joined before the Warrant was promulgated.

A veterinary surgeon under the old rule receives £182 10s. a year, and allowances, and in India he gets 377.87 rupees a month, and no allowances. Under the Warrant, candidates are offered £250 and allowances in England, but they are still only paid 377.87 rupees in India. Now if £182 10s. a year are equivalent to 377.87 rupees in India, £250 a year cannot be equivalent to 377.87 rupees a month.

The scheme almost seems to have been floated to provide India with veterinary surgeons at a cheap rate. In proof of this, let me refer you to the army list, where you will see that out of twenty-three veterinary surgeons who reckoned upon drawing £250 a year, there are twenty who are drawing the equivalent to £182 10s. only. I write not so much to expose a palpable wrong, as to incite intending candidates to inquire minutely into the conditions of service, and wrongs and grievances of the department, before coming forward. They will find very ample food for reflection. I am persuaded that young gentlemen are seduced by the English pay and allowances, and look no further. Now the English pay has very little to do with them, because, with the exception of a lucky few, they will pass the greater part of their ten years' service in India. I hear rumours of a committee to investi-

gate our affairs; the result will be a fresh Warrant, of course, but candidates should be careful, and study it well before throwing themselves at the Government; and above all things, let them watch for quiet little G.G.O.'s in about a year's time, from India. "SACK OF NAILS."

THE VALUE OF APPRENTICESHIP.

To the Editor of the VETERINARY JOURNAL.

SIR,—With your permission I beg to offer a short reply to the letters on this subject which appeared in last month's Journal. Most of the eight or nine pages they occupy are taken up with arguments and assertions to prove the value of manipulative dexterity, the importance of possessing a knowledge of the general management of animals, and the desirability of cultivating business habits and tact.

Now, no one has said a word against any of these valuable acquirements. For my part, I should not object if we could arrange that all our members should possess common-sense, a good education, and a small independent income. These things would add to our social status, and be very nice and comfortable. Attempting to enforce the possession of them by candidates for the diploma, would be just about as Utopian as imagining that the other things my friends so highly value can be arrived at by an apprenticeship.

Manipulative dexterity can be obtained at college during the years of studentship, certainly, better than by twelve months spent with a practitioner. Nothing is more conducive to manipulative dexterity than careful dissection, *i.e.*, if surgery be our field of action. My experience is, that careful dissection is distasteful to the average apprentice, who is always impatient to get on to something "more practical."

A knowledge of the general habits and management of animals is most desirable, but I have yet to learn that this is obtainable by one year's pupilage. It may be that occasionally a man utterly ignorant of these things, enters the colleges; so much the worse for him. If such a one be clever enough to deceive the examiners and get a diploma, I fancy he will find it still easier to deceive the public. Some of my friends think not. Then let them be logical, and propose that half a dozen of the public, who are so acute, be called to assist the examiners. For my part, I am perfectly satisfied with our examining board, and do not believe it grants "diplomas to men without a sufficient guarantee of their ability."

Business habits and tact—most valuable traits—are utterly outside the province of the body corporate, and cannot therefore be admitted as having any weight in this discussion. There are men in the profession who trust to these auxiliaries quite as much as to their professional skill; and there are others who possess professional skill, yet are utterly wanting in these useful traits. They both fill a place in the world, and are rewarded according to their—well, say merits. To a statement of mine that "a student fresh from college might have imbibed theoretical fallacies which he was able to correct by careful observation, by the test of experience," one of your correspondents asks, "At whose expense?" and replies, "Firstly, at the expense of our profession; secondly, that of the practitioner himself; thirdly, his patient; and fourthly, frequently his client's purse." Now, this proves a little too much. It is equally applicable to all practitioners, and to every man during his whole career.

Every man whose practice is of any value to others beside himself, corrects his opinions by observation year by year, and thus gradually attains nearer perfection; but the oldest and best never reach the goal, and are not ashamed to confess that their practice has often been at the expense of the client and the patient. Mr. Banham would have us believe that the apprentice, when

he leaves college, has corrected all his fallacies and has nothing more to learn. Rashness is mistaken for confidence, and incapacity to learn for wisdom. That man is held up to admiration who sees no errors and corrects no opinions, and whose practice—even when at the expense of the patient—is so cleverly done as never to be at the expense of the practitioner. Experience gained, as it only can be gained, by years of practice, Mr. Banham wishes to obviate, as does Mr. Fleming, by one year's pupilage. The idea is simply preposterous.

Some of the arguments set forth in favour of an apprenticeship before going to college are very singular; for instance—"That the knowledge so acquired will prevent a man from being disheartened by the ridicule of those who have been more fortunate in obtaining such instruction previous to their entering college." Surely, if this shows anything, it shows that "the more fortunate" ones are puffed up with vanity and guilty of impertinence. At any rate, it can hardly be accepted as a reason for corporate interference. Another modest assumption in favour of apprenticeship is "that it saves the teacher time and trouble in pointing out small details." What a curious teacher he would be who omitted all small details in the charitable hope that his class had already mastered them! Let the teachers speak for themselves, and tell us of the apprentices who have saved them time and trouble. Is there a man, save Mr. Fearnley, that ever attempted to teach students, who will say he preferred to lecture to a class that had seen practice?

And now, sir, having attempted to clear the ground a little, let me repeat that there is really only one point of difference between those who desire an apprenticeship and those who do not, *i.e.*, whether a man should go to college first, or go to practice first; in other words, whether he should be taught to think and then act, or whether he should be allowed to act without thinking.

Even allowing that a voluntary pupilage of two or three years, as now undergone, is beneficial, it by no means follows that a compulsory one of twelve months will do any good. I say, without fear of contradiction, that there is nothing to be learnt in private practice in that time which cannot be easily learnt at any of our schools—nothing, I mean, which the body corporate has any right to take cognizance of. When a *compulsory* apprenticeship is required, and it is trumpeted about that this is a safeguard against ignorance, a guarantee of fitness to practice, and that its possessor has no false theories to correct, or nothing more to learn—when all this is promised as the result of one year's pupilage with *any* M.R.C.V.S., I cannot but repeat that it is a deception and a snare.

Yours obediently,

Down Street, W. WILLIAM HUNTING.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Allow me to congratulate you on the pupilage Bye-law being carried through during your Presidency, and I only wish the time had been fixed at two years instead of one.

Anything that I could write in favour of so important a benefit to the profession and the public, would be a waste of your space after the exhaustive letters from Messrs. Ward, Sheather, Fearnley, and "G. A. B.," for the practitioners; but the "confession" of Professor Walley, when the subject was debated, calls for a few remarks.

The Professor is reported to have said that "the four and a half years' practice he had had before he went to College, was looked upon by him as lost time, as he had to *unlearn* all he had learned."

Now I happen to know that *one* of the practices he saw was a very extensive one, and his principal was known as a first-rate man in his profession; and I

cannot quietly see the memory of such an esteemed brother-practitioner slurred by the hint of a pupil, that he taught his pupils nothing. Unhappily, he is now unable to answer the charge himself, as he died a few years ago. Whether either of his sons will comment on the Professor's statement, I do not know; but as one who knew him well, I presume to act independently, and give my opinion that it was the Professor's fault, not that of his principal, if he learned nothing worth remembering while with him. I know that it is the custom of professors in all sciences to talk about their students having to unlearn "so much," but Professor Walley goes further than that, and says he had to "unlearn *all he* had learned."

I could almost fill a number of this Journal with anecdotes of the utter want of practical knowledge so many M.R.C.V.S. have shown during the many years I have had experience of them as "assistants," but will not trespass on your space and time more than to relate the following fact. One member, who passed in 1878, came to me strongly recommended by a professor, and on my old hack being saddled for him to ride, he did not know which side to mount, neither did he know on which side to dismount! I need hardly say he did not ride or drive far for me, when I had seen that proof of his practical knowledge. He would have disgraced my practice quickly.

Yours truly,

November 5th, 1880. "1853."

P.S.—I enclose my card and address.

To the Editor of the VETERINARY JOURNAL.

SIR,—In the published reports of two meetings of the profession recently held—viz., that of the North of England Veterinary Medical Association, and that of the Council of the Royal College of Veterinary Surgeons—remarks of mine in reference to the training of veterinary students are reported, which, without a little explanation, may by some be taken in a light other than that which I intended; and, in passing, I would observe that I think in all reports of discussions of this kind there should be no curtailing of the statements made by those who take part in them, a such as proceeding is apt to lead to wrong inferences. At the first meeting above mentioned, I am reported to have said that "*as a rule*, the sons of veterinary surgeons and practical men make the worst students." Now, I am not conscious of having made such a sweeping statement; certainly my intention was to assert that "*very frequently*," instead of *as a rule*, "the sons of veterinary surgeons," etc., and at the Council meeting I distinctly said, "I had seen four and a half years' practice before entering college, and when I became a student I felt I had to a large extent commenced the wrong way, and that I had much to unlearn." The expression attributed to me in the report, would, if it were literally true, have been a poor compliment to my preceptors, for whose instructions I have much to be thankful in my professional career, and the value of which I have ungrudgingly acknowledged elsewhere.

In discussing the matter of veterinary education, it must be borne in mind that there are several points of view from which to look at the question, viz., that of the town practitioner, the country practitioner, the teacher, and the teacher and practitioner combined; of these several individuals, I think it will be conceded that the latter has the best opportunities of obtaining data upon which to base valuable conclusions.

What, in each of the discussions to which I have referred, I wished to impress upon the profession was, that in my opinion, founded on a large and varied experience, a *prolonged* period of pupilage prior to entering college is a disadvantage to students, and in the following ways: First, a student

who has been engaged several years in practice does not, in the majority of instances, settle down kindly to the study of technical subjects; Secondly, he frequently imbibes ideas with reference to disease which are at variance with scientific pathological teaching; Thirdly, after a prolonged period of activity in his profession, the sedentary life of a student acts injuriously—temporarily, and sometimes permanently—upon his health; Fourthly, during a three or four years' pupilage, he will have spent a sum, in many cases, of £300 or £400, add to this £200 or £250 for college expenses, and very frequently another £300 or 400 to start him in practice, and he has spent a little fortune before he has had a chance of earning one penny. And further, after all this expenditure, he finds that the parliament of his profession is powerless to prevent his own groom—whose education has not cost him a farthing—from actively opposing him, or adopting the title to which he alone has any moral—not legal—right. I conscientiously and earnestly urge upon my professional brethren the advisability of allowing their protégés to intermit the practical with the theoretical; if they think it best that they should have a pupilage first, let it be only for a period of a few months—six or eight—then have a session at college, and pass the three subjects of the first examination, followed by a few months' practice, and after the second examination a still longer period of practice. By the adoption of a plan of this kind, students would not look upon study as a bore; they would be trained to habits of study and of scientific observation, their practical education would be enlightened by the teachings of science, and they would get more out of one case than they otherwise would out of twenty. Furthermore, in the course of time a body of men would be raised up, calculated to improve the position of our noble and beloved profession in the eyes of the world, scientific inquiries into veterinary pathology would not be handed over to the human pathologists, and the animal creation would be the first to benefit by the system.

If the general body of the profession were in harmony with the teaching of the schools, this matter would wear a different aspect; but that such harmony does not exist, is proved by remarks often made in communications to the journals, as to what is, and what is not, taught in the schools, and still more forcibly by the fact that the uses of such adjurants to practice as the subcutaneous injection of drugs, the administration of chloroform, the employment of the ecraseur, etc., are frequently discussed at association meetings as if they were matters new and rare, instead of growing grey with the hoar of age.

I might say much more on this subject, but I think I have said sufficient to indicate the views I hold upon it, and as I have freely given, so I hope I shall receive. I am yours obediently,

THOMAS WALLEY.

MAGISTRATES' JUSTICE.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—The case of cruelty heard at Marlborough Street Police Court, and reported in *The Standard* of the 20th October, and the VETERINARY JOURNAL for this month, entitled "The Magistrate and the Veterinary Surgeon," possesses some interest to the veterinary profession, as it points out the manner in which magistrates abuse their position and go out of their way to vilify a professional man on subjects of which they have not the slightest knowledge.

There is no need to analyse the report, as it is fairly correct; but the very important piece of rebutting evidence is left out: whether the animal was, or was not, fit to do the work to which he was put. The history of the case is as

follows:—An aged bay gelding, in very good condition, not particularly fat, was attacked with Laminitis about the 1st of September, and was laid by three weeks, and eventually recovered; but the application of cold water to the feet and legs brought on an old attack of Rheumatism, which caused him to be rested another week; this, by the application of hot fomentation and stimulating liniment, soon subsided, leaving an enlargement of the knee and a slight deposit of bone. He being very fresh and gay, and kicking the stable down, I was asked to allow him to walk a distance of three miles, and rather favoured the idea. Accordingly, on the 1st of October, a period of thirty-one days since the animal had left the stable, he was sent out in a cart *laden with tubs*, one eighteen-gallon cask, three yeast firkins, and performed his task very well, prancing and kicking the whole way.

The officer has stated that the horse was full of inflammation; but those veterinary surgeons who have had any experience with these gentlemen, know how far their word is to be taken, and what value to put on their statements.

Knowing that my brethren will fairly weigh my conduct in doing my duty to my client, it is in their hands that I can safely leave it for judgment, and in the meantime I remain, very sincerely yours,

WILLIAM MOLE, M.R.C.V.S.

138, Rodney Road, Walworth, S.E.

SOAP AND WATER.

To the Editor of the VETERINARY JOURNAL.

SIR,—Your correspondents "Hygeia" and "Sanitas" appear to be very well versed on the soap-and-water question; but I think a great number of their remarks are wholly uncalled for. In all colleges or teaching-schools, and at all times, there is room for reform, but I am not aware that it usually takes the initiative one of cleanliness, and thus, as your correspondents would have us believe, render itself peculiarly adapted to veterinary students. Black sheep, we all know, are to be found in every flock, and so you will meet with an occasional dirty student. "Sanitas" seems particularly hard upon Scotch students—why, I cannot say; mayhap he has some interest at stake in the matter, and probably is a sleeping partner in the famous company who at present so freely advocate the use of "Sanitas" soap. I hope otherwise, and may say that I have seen students from all our colleges, and fail to see but what they are a credit both to their profession and to themselves as regards cleanliness. A student's task, it must be remembered, is not a clean one, taking it altogether, and dissecting, hospital-work, inspection of cattle, etc., are very far from leaving us so delicate as "Sanitas" would wish.

The prospectuses of our different colleges express *a wish only*, that students will appear in a presentable manner—they do not compel them to do so. Hence the wish of your correspondent, that the principals should insist upon cleanliness, falls to the ground. As the veterinary colleges possess a rivalry in teaching, so I believe they do in the laws of "Hygeine," and I trust that the exaggerated remarks made so pointedly at us will excite the interest of the different principals, who alone can speak as to their veracity.

Yours obediently,

November 12th, 1880. "AULD REEKIE."

To the Editor of the VETERINARY JOURNAL.

SIR,—"An Injured Student" has rather mistaken the scope of my letter advocating cleanliness, which spoke generally, and did not refer to any particular school. It is extremely gratifying to learn from him that no student

of the Royal Veterinary College can be accused of neglecting the use of soap and water. My letter never meant to advocate that students should be afraid of dirtying their hands when necessary; my complaint is made of those who, when the dirty work is over, do not make use of those very cheap yet most valuable commodities, soap and water, and of those who, from a miserable and mistaken economy, display dirty linen. "In order to meet 'Hygeia's' view" it will not be necessary to have any special establishment in the colleges. All that is there necessary is a supply of soap, water, and a few towels, which could be provided from the college funds, or by a trifling subscription from each student, so that respectability of appearance may be insured. I feel confident that "An Injured Student" would be the last to defend that of which I complain, and I gather from the indignant tone of his letter that he is, and will continue to be, one of the most zealous and vigilant allies of

Your hopeful servant,

"HYGEIA."

JEYES' PERFECT PURIFIER.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—I have often been at a loss for an efficient, clean, safe, and cheap dressing in skin diseases of the horse, cattle, and dog, especially the latter, and a dressing that will mix readily with water. I think "Jeyes' Perfect Purifier" will answer all these qualities; I have been using it lately, and am very pleased with it. Thinking other veterinarians may have felt this want, I have ventured to send this, if you think it worthy a place in your valuable Journal.

I have also found the preparation very useful as a dressing for unhealthy wounds, "Thrush," and "Canker," and as a disinfectant for drains, stable floors, etc. I have the honour to be, sir,

Your obedient servant,

Cavalry Barracks, York. JOHN T. DIBBEN, A.V.D.
November 11th.

CYSTIC CALCULI.

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—While reading your interesting article on the expulsion of a cystic calculus, I was reminded of an instance of a pony gelding, which was suffering from an unsuccessful attempt to expel one. The patient presented all the symptoms of cystic obstruction; continual unsuccessful attempts to micturate, pawing of the fore feet, occasionally looking back at himself, the perspiration rolling off, and he was groaning with agony. The cause was not far to seek, as on examination I found a calculus imbedded in the urethra, about three inches below the ischial arch, and which entirely closed the canal. Above the obstruction, the urethra was dilated to its utmost extent by the accumulation of urine. I at once cast the patient, and removed the calculus, which was firmly imbedded by its rough surface in the mucous membrane; it was about the size of a hen's egg. As this instance occurred some years ago, I am unable to give you a more detailed account. Within two months of that time the patient unsuccessfully tried to expel another of a similar size, which was also removed by an incision through the perineum. Would you not call this an instance of a calculus being expelled, or, at least, of an animal trying to expel one, after it had attained a certain size? Believe me, Yours truly,

G. DIGBY WHITFIELD, M.R.C.V.S., A.V.D.

Richmond, Yorkshire, *November 17th.*

THE FITZWYGRAM TESTIMONIAL.

(*The following Circular has been forwarded, with the request that it appear in the Journal.*)

To the Editor of the VETERINARY JOURNAL.

DEAR SIR,—Referring to my circular respecting the above Testimonial, I have much pleasure in informing you that a large number of the members of the profession have cheerfully responded to the appeal. About £240 have been subscribed and deposited in the bank. The Committee, however, are about £180 short of the amount required, and I am, therefore, under the necessity of respectfully inviting you to kindly join in carrying out the object we have in view, viz., of presenting Major-General Sir Frederick Fitzwygram, Bart., with his portrait, a duplicate of which is to be hung in the Council-room of the Royal College of Veterinary Surgeons.

The members of the profession must not forget the strong claims that Sir Frederick has upon them, and I trust they will feel a pleasure in showing that they fully appreciate his great services.

Will you kindly forward the amount you are disposed to subscribe as early as convenient to the Treasurer, Mr. Henry Joseph Cartwright, Wolverhampton.

I am, dear Sir, yours most truly,

THOMAS GREAVES, *Hon. Sec.*

Knott Mill, Manchester.
Nov. 10th, 1880.

COMMENTS.

WE learn from the Dublin press that a memorial is in course of signature, for presentation to the Lord Lieutenant of Ireland, praying for the establishment of a veterinary college in that country—at the expense of the three kingdoms, of course. From the tone of the journals, it would appear that the college is to be not only an educational, but a licensing establishment. In pressing this claim, the editors do not appear to be particularly well informed as to the subject of veterinary education and the guarantees for the efficiency of veterinary surgeons. One paper, the *Freeman's Journal*, asserts that "there are at present four veterinary colleges in the United Kingdom—*two* in London, *one* in Edinburgh, and one in Glasgow. The Royal College of Veterinary Surgeons, London, is, however, the only one empowered to grant a diploma—the others are merely affiliated colleges. Every one wishing to become a qualified 'vet.' must go through the prescribed course in one of these colleges, *and then go up to London for his diploma*"*(!)* It is curious to note how the Royal College is always misrepresented by those who wish to obtain some favour from Government with regard to charters or schools. We hope the Irish people may obtain Government aid in founding a veterinary school—they appear to think it should be established and maintained by Government; if they are successful they will be most fortunate indeed, as Government has left the schools to shift for themselves as subscription or private speculations. If the school is to be a licensing as well as a teaching institution, the sister island will be better without it. The *Daily Express* scores a point in remarking that if Scotland has three schools, surely Ireland should have one, seeing that she has to depend more upon her animal production, in which she is richer. We confess we are averse to the multiplication of schools which have to fight for meagre existence, and if Ireland must have a college, surely Scotland could spare her one.

A CORRESPONDENT in the Lake District sends a card which was given him by a man in a spring cart, who was travelling through the country selling veterinary medicines. The card is an advertisement issued by a F.V.M.A.L., Member of the Royal College of Veterinary Surgeons, who presides over a Royal Hospital for Animals, under distinguished patronage, in London. This hospital

has a number of consulting surgeries in different parts, and the card is presented by a person of the same name as the F.V.M.A.L., M.R.C.V.S., and who lives at Bateman Tenement, Burneside, Kendal. On the other side of the card is a list of the ordinary quack medicines, with the usual slangy terms for the diseases they are intended to cure, and the charges. Nothing can be more discreditable than this mountebank method of pursuing a profession, and if some of our members so far forget themselves as to resort to it, they might at least spare the reputation of their College and the feelings of their colleagues by omitting the letters after their name.

A NEWSPAPER cutting from the *Galloway Advertiser* has also been forwarded, which belongs to the same category as the Cheap-jack card referred to. It is an advertisement inserted by a graduate of 1880, who practises in Stranraer.

ANSWERS TO CORRESPONDENTS.

APROPOS.—1. The sum named will cover expenses on joining the army; 2. Not yet; 3. Etiquette certainly requires this behaviour towards colleagues in the same town.

CANINE MADNESS.—Fleming's Rabies and Hydrophobia is the only complete monograph on the malady in at least the English language.

PFERD.—The papers on the Anatomy and Physiology of the Horse's Foot, by Mr. Fleming, have not been published in pamphlet form. The best German work on animal parasites is Zurn's "Schmarotzer," published at Weimar in 1872.

Communications, Books, Journals, etc., Received.

COMMUNICATIONS have been received from J. Nunn, R.A., Punjab; E. Wooler, Darlington; W. Mole, London; J. T. Duncan, Ontario; J. MacQueen, Glasgow; "Sack of Nails"; "1853"; J. McCall, Glasgow; "G. A. B."; W. Fream, London; T. Walley, Edinburgh; J. McFadyean, Edinburgh; "Hygeia"; J. T. Dibbin, Army Veterinary Department; W. H. Jones, Edinburgh; C. G. H. Reilly, 7th Dragoon Guards, Aldershot; J. MacKinder, Peterborough; W. Hunting, London; C. Whitworth, London; F. Smith, 12th Lancers, India; G. D. Whitfield, A.V.D.; J. H. Steel, Royal Veterinary College, London; "Apropos"; "Canine Madness;" H. Olver, Tamworth; "Esse Quam Videri"; "Pferd."

BOOKS AND PAMPHLETS: Bulletin de la Société Centrale de Méd. Vétérinaire; *L. Born*, Der Mais als Futtermittel; *M. E. Decroix*, Etudes sur la Ferrure a Glace; *J. Hugues*, La Vétérinaire en Belgique; Bulletin de la Société Centrale de Médecine Vétérinaire; Bulletin de la Société de Méd. Vétérinaire Pratique; *L. Hoffman*, Thier-Psychologie.

JOURNALS, ETC.: *L'Echo Vétérinaire; Wochenschrift für Thierheilkunde; Oesterreich, Vierteljahr. für Wissenschaftliche Veterinarkunde; American Veterinary Review; Repertorium der Thierheilkunde; Annales de Méd. Vétérinaire; Deutsche Zeitschrift fur Thiermedicin; Recueil de Méd. Vétérinaire; American Live Stock Journal; Journal de Méd. Vétérinaire Pratique; Archives Vétérinaire; Agricultural Gazette; Farmer; Mark Lane Express; Journal of the Royal Agricultural Society of England; Thierarzt; Journal de la Societe contre l'Abus du Tabac; Lancet; Medical Press and Circular; Revue Vétérinaire; Journal de Med. Vétérinaire et de Zootechnie; Live Stock Journal; Field.*

NEWSPAPERS: *Colman's Rural World; Montreal Gazette; South Australian Register; Berwick Advertiser; Cork Constitution; Scotsman; York Herald; Edinburgh Courant; Berwick Journal; Freeman's Journal; Dublin Daily Express.*

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